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THE MEDITERRANEAN
PILOT. VOL. IV.
FOURTH EDITION.
1908.

CAUTION WHEN APPROACHING BRITISH PORTS.

(To be inserted inside cover of all Sailing Directions.)

PART I.—CLOSING OF PORTS.

(1) My Lords Commissioners of the Admiralty having taken into consideration the fact that it may be necessary to forbid all entrance to certain ports of the Empire, this is to give Notice that on approaching the shores of the United Kingdom, or any port of the British Empire, a sharp lookout should be kept for the signals described in the following paragraph, and for the vessels mentioned in paragraph (4), Part II., of this Notice, and the distinguishing and other signals made by them. In the event of such signals being displayed, the port should be approached with great caution, as it may be apprehended that obstructions may exist.

(2) If entrance to a port is prohibited, three *red* vertical lights by night, or three *red* vertical balls by day, will be exhibited in some conspicuous position in or near to its approach, which signals will also be shown by the vessels indicated in paragraph (4), Part II., of this Notice.

If these signals are displayed, vessels must either proceed to the position marked "Examination Anchorage" on the Admiralty Charts and anchor there, or keep the sea.

PART II.—EXAMINATION SERVICE.

(3) Under certain circumstances, it may become necessary to take special measures to examine vessels desiring to enter the ports or localities at home or abroad, referred to in Notices to Mariners No. 1 of 1916 and subsequent years.

(4) In such case, vessels carrying the distinguishing flags or lights mentioned in paragraph (6) will be charged with the duty of examining ships which desire to enter the ports and of allotting positions in which they shall anchor. If Government vessels, or vessels belonging to the local port authority, are found patrolling in the offing, merchant vessels are advised to communicate with such vessels with a view to obtaining information as to the course on which they should approach the Examination Anchorage. Such communication will not be necessary in cases where the pilot on board has already received this information from the local authorities.

(5) As the institution of the Examination Service at any port will never be publicly advertised, especial care should be taken in approaching the ports, by day or night, to keep a sharp lookout for any vessel carrying the flags or lights mentioned in paragraph (6), and to be ready to "bring to" at once when hailed by her or warned by the firing of a gun or sound rocket.

In entering by night serious delay and risk will be avoided if four efficient all round lamps, two *red* and two *white*, are kept available for use.

(6) By day the distinguishing flags of the Examination Steamer will be a special flag (white and red horizontal surrounded by a blue border) and a blue ensign.

Also, three *red* vertical balls if the port is closed.

By night the steamer will carry: (a) Three *red* vertical lights if the port is closed; (b) three *white* vertical lights if the port is open.

The above lights will be carried in addition to the ordinary navigation lights, and will show an unbroken light around the horizon.

(7) Masters are warned that, when approaching a British port where the Examination Service is in force, they must have the distinguishing signal of their vessel ready to hoist immediately the Examination Steamer makes the signal.

(8) Masters are warned that, before attempting to enter any of these ports when the Examination Service is in force, they must in their own interests strictly obey all instructions as to entry given to them by the Examination Steamer. In the absence of any instructions from the Examination Steamer they must proceed to the position marked "Examination Anchorage" on the Admiralty Charts, and anchor there, or keep the sea.

Whilst at anchor in the Examination Anchorage, Masters are warned that they must not lower any boats (except to avoid accident), communicate with the shore, work cables, move the ship, or permit anyone to leave the ship, without permission from the Examination Steamer.

(9) In case of fog, Masters of vessels are enjoined to use the utmost care, and the Examination Anchorage itself should be approached with caution.

(10) Merchant vessels when approaching British ports are specially cautioned against making use of private signals of any description, either by day or night, the use of them will render a vessel liable to be fired on.

(11) The pilots attached to the ports will be followed.

(To face Cautionary Notice in all Sailing Directions.)

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**NOTATIONS OF SUPPLEMENTS AND ANNUAL
SUMMARIES OF NOTICES TO MARINERS
RELATING TO THIS BOOK.**

To be filled in by Navigating Officer.

[In Chart Dépôts the two first columns are alone to be filled up.]

Title.	Date of Publication and Number.	Whether pasted in or noted in Margins of Book, and Date of each Correction.

NOTICE.

HYDROGRAPHIC DEPARTMENT, ADMIRALTY.

In January of each year the information affecting this book, which has been published during the preceding year in the Admiralty Notices to Mariners, is compiled and issued as a separate publication. If a Supplement has been issued during the year, this publication will only include Notices issued since the date of the Supplement. Mariners are advised to procure copies of these publications. They can be obtained gratuitously from the Admiralty Agent or Sub-Agents for the sale of charts on presentation of the coupons on the next page, either personally or by letter. In the latter case the cost of postage must be enclosed.

The Supplements or Hydrographic Notices to this book which may be published can also be obtained in a similar manner on presentation of the coupons below.

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VOL. IV., 1908.

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9th. Brit. Hydrograph. Dept.

THE MEDITERRANEAN PILOT.

VOL. IV.

COMPRISING

THE ARCHIPELAGO, WITH THE ADJACENT COASTS
OF GREECE AND TURKEY: INCLUDING ALSO THE
ISLAND OF CRETE OR CANDIA.

ORIGINALLY COMPILED BY COMMANDER JAMES PENN, R.N.

FOURTH EDITION.

1908.

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1908.

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TO THE

FOURTH EDITION.

THE Mediterranean Pilot, Vol. IV., contains Sailing Directions for the islands of the Grecian Archipelago, together with the adjacent coasts of Greece and Turkey, commencing at cape Matapan on the west, and ending at cape Alupo on the east; including also the island of Crete or Candia.

These descriptions are derived from the Admiralty surveys conducted by Captains Copeland, Stanley, Graves, Brock, Spratt, Mansell, Learmonth, and other officers of the Royal Navy, between the years 1832 and 1903.

Supplementary details derived from the remark books of officers of His Majesty's ships, and other documents in the Hydrographic Department of the Admiralty, have also been included.

The Mediterranean Pilot, Vol. IV., was compiled in '1882, by Commander James Penn, late of the Hydrographic Department, Admiralty.

The second edition was prepared by Captain J. F. R. Aylen, R.N., in 1892.

The third edition was prepared by Captain J. G. Boulton, R.N., in 1900.

The present, fourth, edition has been prepared by Commander C. V. Smith, of the Hydrographic Department, Admiralty.

By the publication of this work, all former editions, as well as Supplements or Hydrographic Notices relating to them, and all Notices to Mariners up to and including No. 916 of 1908, are cancelled.

With a view to the general interests of Navigation, seamen are invited to transmit to the Secretary of the Admiralty, notices of errors or omissions they may detect in this work, as well as any fresh information they may obtain.

A, M. F.

HYDROGRAPHIC OFFICE,
ADMIRALTY, LONDON.
June, 1908.

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LIST OF GREEK AND TURKISH WORDS OCCASIONALLY
USED IN THE CHARTS AND SAILING DIRECTIONS
OF THE GRECIAN ARCHIPELAGO.

GREEK WORDS.

Greek.	English.	Greek.	English.
Agios, -a, -on	Holy, sacred, saint.	Lips	South-west.
Akropolis	Citadel, fortress.	Lithos	A stone.
Akroterion	Cape.	Megas, Megale, } ..	Great.
Anemomulos	Windmill.	Megalo	Black.
Apeliotes	East.	Melas, Melaina, Melan ..	Black.
Aspros, -a, -on	White.	Meses	North-east.
Aster, astron	A star.	Metron	A measure.
Borras, Boreas	North.	Mikros, -a, -on	Little, small.
Bounon	Mountain, hill.	Naos	Church.
Brachos	Cliff.	Naulochos	Harbour.
Broma	Food.	Naus	A ship.
Chersonesus	Peninsula.	Neos, -a, -on	New.
Chloros, -a, -on	Green.	Nesos, Nisi, Nisia	Isle, island, islands.
Chorion	Village.	Notos	South.
Chronos	Time.	Oikos	House.
Croma	Colour.	Ormos	Bay, roadstead.
Dendron	Tree.	Oros	Mountain, hill.
Diorux	Canal.	Palaaios, -a, -on	Old.
Drumos	Wood.	Petra	Rock.
Ekklesia	Church.	Petros	Stone or rock.
Eruthros, -a, -on	Red.	Phanos	Light, beacon.
Euros	South-east.	Pharos	Lighthouse.
Glotta or glossa	Tongue.	Philos	A friend.
Gonia	Angle or corner.	Phos, photos	Light.
Grapho	I write.	Pneuma	Wind.
Helios	The sun.	Polis	City, town.
Hudor	Water.	Potamos	River.
Isthmos	Isthmus.	Prasinos, -e, -on	Green.
Kastelli	Castle, fortress.	Prioreus, Photes	Pilot.
Kastro or Kastron	Castle, fortress.	Purgos	Tower.
Kato	Lower.	Semanterion	Buoy, mark.
Khora	Small town.	Skiron	North-west.
Kolpos	Gulf.	Skopeco	I see.
Kome	Village.	Skopelos	A rock.
Kuklos	A circle.	Taphos	A tomb.
Limen	Harbour, port.	Zephuros	West.
Limne	Lake.		

TURKISH WORDS.

Turkish.	English.	Turkish.	English.
Agatsh, Aghach, } Tree.		Kilisa Church.	
Aghaj } Eunuch.		Kizil, Krimzi Red.	
Agha } Entrance.		Koyun Bight, cove	
Aghz } White.		Kuchuk Small.	
Ak } ..		Kiurfez Bay.	
Ata, Ada, Adassi .. Island, islet, islands		Kulleh Tower.	
Bahrieh Feriki .. Vice-Admiral.		Kum Sand.	
Bakshish Gratuity.		Kuyu A well.	
Balchik Clay.		Kyupru A bridge.	
Bash Head, chief.		Liman Port, harbour.	
Batagin A marsh.		Liman-reissi .. Port-Admiral.	
Bazar Market.		Liva Country.	
Beyaz White.		Maden Mine.	
Boghaz { Channel, strait,		Maghreb West.	
	estuary.	Mesjid Mosque.	
Burun, Burnu .. Cape, point, promontory, head-land.		Moucaddess .. A saint.	
Buyuk Great.		Mudir Governor of a city.	
Capitan or Captan .. Commander of a ship.		Nehir River, stream.	
Chai River.		Nishan Beacon.	
Chamur Mud.		Nizam Regulation.	
Chiflik Farm.		Orman Forest, wood.	
Dagh or Tagh .. Mountain.		Palanka Fort, fortress.	
Demir-yeri .. Anchorage.		Rakitsau Still water.	
Deniz Sea.		Reis { Chief, captain of a ship.	
Dere Valley.		Sanjak Flag.	
Derin Deep.		Sanjak-i-Humayun .. Imperial standard.	
Deyirmeni .. Mill.		Sanjak sheriff .. A religious flag.	
Dil { Isthmus, point,		Sarai { Palace, house.	
	spit of sand.	Selam { Health, a salutation.	
Dragoman Interpreter.		Shahbender .. An ambassador.	
Eski Old, ancient.		Shamandirah .. A buoy.	
Fener A beacon.		Shark East.	
Geul, Ghol, or Gol .. Lake.		Sharki Eastern.	
Gharb, Gharbi .. West.		Shehr or Sheher .. Town, city.	
Gyumruk Custom house.		Shemal North.	
Ich, Ichereh .. Inner.		Siglic A bank, shoal.	
Inshallah Please God.		Su Water.	
Irmak River.		Tabia Battery.	
Iskele Landing-place.		Tashlik Stony.	
Jami Mosque.		Tepe Hill, tumulus.	
Jenub, Jenubi .. Southerly.		Tersane { The Turkish Admiralty.	
Kaba-kum Gravel.			Interpreter, dragoon.
Kale Castle.		Terjuman	
Kapu Gate, pass.		Tish, Tashrah .. Outer.	
Kara Black.		Tograuk Bar of a river.	
Kaya Bluff, cliff, rocky.		Vilayet District.	
Kayalik Rocky.		Yar Bluff, cliff.	
Keurfaz Gulf.		Yeni New.	
Khan Inn, hotel.		Yer Land, country.	
Kilaguz A pilot.		Yol Channel, road.	
Kioi Village, hamlet.		Yukari Up.	

SYSTEM OF ORTHOGRAPHY.

Adopted by the Admiralty for Sailing Directions and Charts.

As far as has been found possible with existing knowledge, native names are spelt in accordance with the following system, which has been adopted by the principal authorities in Great Britain and by the United States, and has been for some years in process of gradual introduction into all Admiralty Sailing Directions and Charts.

No change is made in the orthography of foreign names in countries which use Roman letters; thus French, Spanish, Portuguese, Dutch, &c., names will be spelt as by the respective nations.

1. Where native names have been so long written in a form which, though not in accordance with this system, has become familiar to English eyes from being so spelt in all charts and maps, they are retained.

2. The true sound of the word as locally pronounced is taken as the basis of the spelling.

3. An approximation of the sound is alone aimed at. A system which would attempt to represent the more delicate inflections of sound and accent would be so complicated as only to defeat itself.

4. The broad features of the system adopted are that vowels are pronounced as in Italian and consonants as in English, *every letter being pronounced*. Two accents only are used:—

(1) The acute, to denote the syllable on which stress is laid. The use of this is very important, as the sounds of many names are entirely altered by the misplacement of this "stress."

(2) The sign ~ over the letter U to denote the short sound of that vowel under certain circumstances. (See Table.)

5. When two vowels come together, each one is sounded, though the result, when spoken quickly, is sometimes scarcely to be distinguished from a single sound, as in *ai, au, ei*.

The amplification of the rules is given on the following pages.

Information is invited as to the proper spelling of native names, so as to produce the nearest approximation to the true sound, by this system.

Letters.	Pronunciation and Remarks.	Examples.
a	<i>ah</i> , <i>a</i> as in <i>father</i> - - - -	Java, Banána, Somáli, Bari.
e	<i>eh</i> , <i>e</i> as in <i>bet</i> ; <i>a</i> as in <i>fate</i> - - -	Tel-el-Kebír, Oléleh, Yezo, Levúka, Peru.
i	English <i>e</i> ; <i>i</i> as in <i>ravine</i> ; the sound of <i>ee</i> in <i>beet</i> . Thus, not <i>Feejee</i> , but	Fiji, Hindi.
o	<i>o</i> as in <i>mote</i> - - - -	Tokyo.
u	long <i>u</i> as in <i>flute</i> ; the sound of <i>oo</i> in <i>boot</i> . <i>oo</i> or <i>ou</i> should never be employed for this sound. Thus, not <i>Zooloo</i> or <i>Zoulou</i> , but	Zulu, Sumatra.

Letters.	Pronunciation and Remarks.	Examples.
	<p>The shorter sound of the different vowels, when necessary to be indicated, can be expressed by doubling the consonant that follows. The sounds referred to are as follows :—</p> <p>The short <i>a</i> as in <i>fatter</i>, as compared with the long <i>a</i> as in <i>father</i>.</p> <p>The short <i>e</i> as in <i>better</i>, as compared with the long <i>e</i> as in <i>fate</i>.</p> <p>The short <i>i</i> as in <i>sinner</i>, as compared with the long <i>i</i> as in <i>ravine</i>.</p> <p>The short <i>o</i> as in <i>sobbing</i>, as compared with the long <i>o</i> as in <i>sober</i>.</p> <p>The short <i>u</i> as in <i>rubber</i>, as compared with the long <i>u</i> as in <i>rubric</i>.</p>	Yarra, Tanna, Mecca, Jidda, Bonny.*
ü	<p>is the same short sound of <i>u</i> as is denoted by doubling the consonant following, but is used, and only used, where such doubling is impossible, as in the case of words where <i>u</i> is followed by two different consonants, as in <i>Tüng</i>, pronounced as the English <i>tongue</i>.</p> <p>Doubling of a vowel is only necessary where there is a distinct repetition of the single sound.</p>	Nuulúa, Oosima.
ai	English <i>i</i> as in <i>ice</i> - - - -	Shanghai.
au	<i>ow</i> as in <i>how</i> . Thus, not <i>Foochow</i> , but	Fuchau.
ao	is slightly different from <i>au</i> - - - -	Macao.
aw	when followed by a consonant or at the end of a word as in <i>law</i> - - - -	Cawnpore.
ei	is the sound of the two Italian vowels, but is frequently slurred over, when it is scarcely to be distinguished from <i>ey</i> in the English <i>they</i> , or <i>ei</i> in <i>eight</i> .	Beirút, Beilul.
b	English <i>b</i> .	
c	is always soft, but is so nearly the sound of <i>s</i> that it should be seldom used. If <i>Celébes</i> were not already recognised it would be written <i>Selébes</i> .	Celébes.
ch	is always soft as in <i>church</i> - - - -	Chingchin.
d	English <i>d</i> .	
f	English <i>f</i> . <i>Ph</i> should not be used for the sound of <i>f</i> . Thus, not <i>Haiphong</i> , but	Haifong, Nafa.
g	is always hard. (Soft <i>g</i> is given by <i>j</i>) -	Galápagos.
h	is always pronounced when used.	
hw	as in <i>what</i> ; better rendered by <i>hw</i> than <i>wh</i> , or <i>h</i> followed by a vowel. Thus, <i>Hwang ho</i> , not <i>Whang ho</i> or <i>Hoang ho</i> .	Hwang ho, Ngan' hwei.
j	English <i>j</i> . <i>Dj</i> should never be put for this sound.	Japan, Jinchuen.

* The *y* is retained as a terminal in this word under Rule 1. The word is given as a familiar example of the alteration in sound caused by the second consonant.

Letters.	Pronunciation and Remarks.	Examples.
k	English <i>k</i> . It should always be put for the hard <i>c</i> . Thus, not <i>Corea</i> , but	Korea.
kh	The Oriental guttural - - - -	Khan.
gh	is another guttural, as in the Turkish -	Dagh, Ghazi.
l	} As in English.	
m		
n		
ng		
	has two separate sounds, the one hard as in the English word <i>finger</i> , the other as in <i>singer</i> . As these two sounds are rarely employed in the same locality, no attempt is made to distinguish between them.	
p	As in English.	
ph	As in <i>loophole</i> - - - - -	Mokpho, Chemulpho.
th	stands both for its sound in <i>thing</i> , and as in <i>this</i> . The former is most common -	Bethlehem.
q	should never be employed ; the sound of <i>qu</i> in <i>quiver</i> is given as <i>kw</i> . When <i>qu</i> has the sound of <i>k</i> , as in <i>quoit</i> , it should be given by <i>k</i> .	Kwangtung.
r	As in English.	
s	As in <i>sin</i> .	
sh	} As in English.	
t		
v		
w		
x		Sawákin.
y		
	is always a consonant, as in <i>yard</i> , and therefore should never be used as a terminal, <i>i</i> or <i>e</i> being substituted. Thus, not <i>Mikindány</i> or <i>Wady</i> , but not <i>Kwaly</i> , but	Kikūyu.
z	English <i>z</i> - - - - -	Mikindáni, Wadi.
zh	French <i>ʒ</i> , or as <i>s</i> in <i>treasure</i> - - - - -	Kwale.
	Accents should not generally be used, but where there is a very decided emphatic syllable or stress which affects the sound of the word, it should be marked by an <i>acute</i> accent.	Zulu.
		Muzhdaha.
		Tongatábu,
		Galápagos,
		Paláwan,
		Saráwak.

In the case of native names in countries under the dominion of other European powers, in whose maps, charts, &c., the spelling is given according to the system adopted by that power, such orthography is, as a rule, disregarded, and the names are spelt according to the British system. Thus the island east of Java in possession of the Dutch is spelt *Madoera* by them, but on Admiralty charts *Madura*. A town in Java appears on Dutch charts as *Tjilatjap* ; in the British, *Chilachap*.

When a foreign language is written in a vocabulary of fixed sounds, so as to permit of transliteration into the British system, a table of equivalents for each letter is drawn up, and names of places can be transliterated without regard to pronunciation.

To reduce Greek names to the orthographic form, required by the foregoing system, would require so many changes that it has been decided to defer the revision of Admiralty publications until the system has been more generally introduced and used.

The Greek names are therefore left for the present in their old shape, but these give in most cases a very erroneous idea of the sound of the names, as pronounced by Greeks, and in many cases the modern Greek spelling gives a clue to the pronunciation by aid of the table of equivalents.

Thus Ευβοια now spelt Eubœa is pronounced Evvia.

„ Χαλκίς „ Chalcis „ Khalkis.

„ Κεφαλληνία „ Cephallonia „ Kefallinia.

Whenever C appears in a Greek name as at present written it may be taken for granted it has the sound of K.

Greek Letters	Roman Equivalents by Admiralty System	Greek Letters	Roman Equivalents by Admiralty System
Α α	a	Ρ ρ	r
Β β	v	Σ σ ς	s
Γ γ	g	Τ τ	t
Δ δ	d	Υ υ	i
Ε ε	e	Φ φ	ph
Ζ ζ	z	Χ χ	kh
Η η	i	Ψ ψ	ps
Θ θ	th	Ω ω	o
Ι ι	i	ΑΙ αι	ei
Κ κ	k	ΕΙ ει	i
Λ λ	l	ΟΙ οι	i
Μ μ	m	ΟΥ ου	u
Ν ν	n	ΥΙ υι	i
Ξ ξ	x	ΑΥ αυ	aph, av
Ο ο	o	ΕΥ ευ	eph, ev
Π π	p	ΗΥ ηυ	iph, iv

INFORMATION RELATING TO CHARTS, SAILING DIRECTIONS, AND THE GENERAL NAVIGATION OF H.M. SHIPS.

ON THE CORRECTION OF CHARTS, LIGHT LISTS, AND SAILING DIRECTIONS.

THERE are three descriptions of publications as guides to navigation—the Charts, the Sailing Directions, and the Light Lists—which are all affected by the continual changes and alterations that take place.

Of these the charts should always be, so far as our knowledge permits, absolutely correct to date; and the Light Lists should be noted for the recent alterations, though space will not permit of full details being always inserted; the Sailing Directions, however, cannot, from their nature, be so corrected, and *in all cases where they differ from charts, the charts must be taken as the guide.*

1. *Charts.*—When issued to a ship on commissioning, the charts have received all necessary corrections to date. As sent from the Hydrographic Office they are, as a rule, fresh from the plates. They then receive such corrections by hand in the dépôts as are required, and are so issued to the ships.

The charts in the folios should have the same dates of correction as shown against each in the Lists pasted on the outside of the folio. The Navigating Officer is to satisfy himself that they do so agree before signing the receipt for the same.

All small but important corrections that can be made by hand are notified by Notices to Mariners, and should at once be placed on the charts to which they refer.

Large corrections that cannot be conveniently thus made are put upon the plates, and fresh copies are issued to the ships to replace the others, which are directed to be destroyed to prevent the possibility of their being used in the navigation of the ship.

The dates on which these large corrections are made are noted on the chart plates in the middle of the lower edge; those of the smaller corrections at the left-hand lower corners.

In all cases of quotations of charts, these dates of corrections should be given, as well as the number of the chart (which will be found in the lower right-hand corner), in order that at the Admiralty it may be known what edition of the chart is referred to.

For convenience of office reference each chart has now two numbers, the ordinary number in the right-hand lower corner, and a number in brackets, thus: [429] in the left-hand lower corner, which is now called the New Number.

These new numbers are also given in the Catalogue of Admiralty Charts.

2. *The Light Lists*, annually published at the beginning of each year, are not corrected in the dépôts before issue, but appendices are issued every two months, giving the alterations that have taken place, copies of which are put into the chart boxes.

It is the duty of the navigating officer when he receives the set of charts to make notations in the Light Lists from these appendices, and from the Notices to Mariners in the box; and to keep them so corrected from time to time.

The Light Lists should always be consulted as to the details of a light, as the description in the Sailing Directions may be obsolete, in consequence of changes made since publication. The charts also may not be equally up to date in some details, for which no Notices to Mariners have been issued.

3. *The Sailing Directions* are not corrected before issue, except occasionally for very important new rocks or dangers. Hydrographic Notices and Supplements referring to each volume are published from time to time.

Supplements contain all the information received up to date since the publication of the volume to which they refer, and cancel all previous Hydrographic Notices.

Hydrographic Notices contain all information up to date since the publication of the volume, or since the last Supplement or Hydrographic Notice, but endeavour is made to issue no more than one of these affecting each volume, and, on the collection of fresh information, to include the former Notice in a Supplement.

The existence of Supplements or Hydrographic Notices is to be noted, in the tabulated form placed for the purpose inside the cover of each volume, in cases when such notations have not been made before issue, and also on receipt of further Notices after commission.

Notes should be made in the margin of the volume of sailing directions affected, as references to the Supplements or Hydrographic Notices when the latter are printed on both sides.

To enable the books to be more conveniently corrected, however, such Supplements and Hydrographic Notices as are of moderate size are now being printed on one side only, and two copies are issued to each ship—one to cut up, the slips being pasted in at the appropriate place; the other to retain intact for reference.

To make these notations or paste in these slips is one of the early duties of a navigating officer after drawing his box of charts and books, and similar notes are to be made from Notices to Mariners that may thereafter be received.

It must, however, be thoroughly understood that sailing directions will never be correct in all details, except up to the date of the last Hydrographic Notice or Supplement, and that, as already stated, when differences exist, the chart, which should be corrected from the most recent information, should be taken as the guide; for which purpose, for ordinary navigation, they are sufficient.

THE USE OF CHARTS AS NAVIGATIONAL AIDS, AND GENERAL REMARKS RELATING TO PRACTICAL NAVIGATION.

1. *Accuracy of a Chart.*—The value of a chart must manifestly depend upon the accuracy of the survey on which it is based, and this becomes more important the larger is the scale of the chart.

To estimate this, the date of the survey, which is always given in the title, is a good guide. Besides the changes that, in waters where sand or mud prevails, may have taken place since the date of the survey, the earlier surveys were mostly made under circumstances that precluded great accuracy of detail, and, until a plan founded on such a survey is tested, it should be regarded with caution. It may, indeed, be said that, except in well-frequented harbours and their approaches, no surveys yet made have been so minute in their examination of the bottom as to make it certain that all dangers have been found. The fulness or scantiness of the soundings is another method of

estimating the completeness of a chart. When the soundings are sparse or unevenly distributed, it may be taken for granted that the survey was not in great detail.

It appears to be insufficiently realised that the degree of reliance which may reasonably be placed upon an Admiralty chart, even in surveys of modern date, is mainly dependent on the scale on which the survey was made. The scale for publication is now generally that of the original survey, except in the case of Coast sheets, which are sometimes reduced. It should not, therefore, be assumed that the original survey was made on a larger scale than that published.

It must be borne in mind that the only method of ascertaining the inequality of the bottom of the sea is by the laborious process of sounding, and that in sounding over any area, the boat or vessel obtaining the soundings is kept on given lines; that each time the lead descends it only ascertains the depth of water over an area equal to the diameter of the lead, that is about two inches, and that consequently each line of soundings, though miles in length, is only to be considered as representing a width of two inches.

Surveys are not made on equal scales, but each survey is made on a scale commensurate with its apparent importance. For instance, a general survey of a coast which vessels only pass in proceeding from one place to another is not usually made on a scale larger than one inch to the nautical mile, whilst surveys of areas where vessels are likely to anchor are made on a scale of three inches to the mile, and surveys of frequented ports, or harbours likely to be used by Fleets, on a scale of from six inches to ten inches to the nautical mile.

Close examination by sounding is the only method by which surveys on a large scale can be made, and in view of the vast mileage of surveys yet requiring completion in the interests of navigation, it would be a waste of time to undertake large Coast surveys.

The scale on which a survey is to be conducted having been settled, it is manifestly superfluous to obtain more lines of soundings than can be represented on the paper. 100 soundings, which is the maximum number that can be placed with clearness on every square inch of paper, means that on a scale of one inch to the mile each sounding on the chart occupies an area representing eight acres of actual ground, whilst on a scale of six inches to the mile each sounding represents an area of a little less than a quarter of an acre, *i.e.*, of 100 feet square.

The following diagram represents as many soundings as can be placed legibly on a square inch of paper :—

16	15	15	13	13	14	12	11	10	9
14	15	14	14	13	13	12	11	9	8
15	15	14	17	16	14	13	10	10	9
16	16	17	16	16	12	11	8½	9	10
16	17	15	12	9	7½	7½	7½	9	10
19	16	12	9	5½	4½	5½	6½	8½	9
22	19	16	10	3½	5½	6½	7½	8½	10
20	16	12	7½	5½	6½	6½	7½	8½	10
16	15	11	9	7½	7	7½	8½	10	11
20	17	14	11	12	10	9	10	11	13

Little assistance in detecting excrescences on the bottom is afforded by the eye, even in clear water, on account of the observer being within five feet of the surface; none in turbid seas. If there is no inequality in the soundings to cause suspicion, a patch between two lines may occasionally escape detection.

Lines of soundings plotted as close as may be practicable on a scale of 6 inches to the mile would be 100 feet apart, and each line would be only .2 inches in actual width.

Thus, in a chart on a scale of one inch to the mile, an inequality of some acres in extent rising close to the surface, if it happened to be situated between two lines, might escape the lead; whilst in a chart on a scale of 6 inches, inequalities as large as battleships, if lying parallel to, and between the lines of soundings, might exist without detection if they rose abruptly from an otherwise even bottom.

General Coast charts should not, therefore, be looked upon as infallible, and a rocky shore should on no account be approached within the contour line of 10 fathoms, without taking every precaution to avoid a possible danger; and even with surveys of harbours on a scale of 6 inches to the mile, vessels should avoid, if possible, passing over charted inequalities in the ground, as some isolated rocks are so sharp that the lead will not rest on them.

Blank spaces among soundings mean that no soundings have been obtained in these spots. When the surrounding soundings are deep it may with fairness be assumed that in the blanks the water is also deep; but when they are shallow, or it can be seen from the rest of the chart that reefs or banks are present, such blanks should be regarded with suspicion. This is especially the case in coral regions and off rocky coasts, and it should be remembered that in waters where rocks abound it is always possible that a survey, however complete and detailed, may have failed to find every small patch.

A wide berth should therefore be given to every rocky shore or patch, **and this rule should be invariably followed, viz., that instead of considering a coast to be clear unless it is shown to be foul, the contrary should be assumed.**

2. Fathom Lines a Caution.—Except in plans of harbours that have been surveyed in detail, the five-fathom line on most Admiralty charts is to be considered as a caution or danger line against unnecessarily approaching the shore or bank within that line, on account of the possibility of the existence of undiscovered inequalities of the bottom, which nothing but an elaborate detailed survey could reveal. In general surveys of coasts or of little frequented anchorages, the necessities of navigation do not demand the great expenditure of time required for such a detailed survey. It is not contemplated that ships will approach the shores in such localities without taking special precautions.

The ten-fathom line is, on rocky shores, as before mentioned, another warning, especially for ships of heavy draught.

Charts where no fathom lines are marked must be especially regarded with caution, as it generally means that soundings were too scanty and the bottom too uneven to enable them to be drawn with accuracy.

Isolated soundings, shoaler than surrounding depths, should always be avoided, especially if ringed round, as there is no knowing how closely the spot may have been examined.

3. Chart on Largest Scale always to be used.—It sometimes happens that, from press of work, only the copper plate of the larger scale chart of a particular locality can at once receive any extensive re-arrangement of coastline or soundings. This is an additional reason, besides the obvious one of the greater detail shown, why this largest scale chart should always be used for navigating.

4. Caution in using Small Scale Charts.—In approaching the land or dangerous banks, regard must always be had to the scale of the chart used. A small error in laying down a position means only yards on a large scale chart, whereas on a small scale the same amount of displacement means large fractions of a mile. This is particularly

to be observed when coming to an anchor on a narrow ledge of convenient depth at some distance from the shore.

For the same reason bearings to objects near should be used in preference to objects farther off, although the latter may be more prominent, as a small error in bearing or in laying it down on the chart has a greater effect in misplacing the position the longer the line to be drawn.

5. *Distortion of Printed Charts.*—The paper on which charts are printed has to be damped. On drying, distortion takes place from the inequalities in the paper, which greatly varies with different paper and the amount of the original damping; but it does not affect navigation. It must not, however, be expected that accurate series of angles taken to different points will always exactly agree, when carefully plotted upon the chart, especially if the lines to objects be long. The larger the chart the greater the amount of this distortion.

6. *Buoys.*—It is manifestly impossible that any reliance can be placed on buoys always maintaining their exact position. Buoys should therefore be regarded as warnings and not as infallible navigating marks, especially when in exposed positions; and a ship should always, when possible, be navigated by bearings or angles of fixed objects on shore and not by buoys.

Gas Buoys.—The lights shown by gas buoys cannot be implicitly relied on, as, if occulting, the apparatus may get out of order, or the lights may be altogether extinguished. These lights in the British Islands are from 10 to 50 candle-power.

7. *Lights.*—Circles drawn on charts round a light are not intended to give information as to the distance at which it can be seen, but solely indicate, in the case of lights which do not show equally in all directions, the bearings between which the variation, or visibility, or obscuration of the light occurs.

All the distances given in the Light Lists and on the charts for the visibility of lights are calculated for a height of an observer's eye of 15 feet. The table of distances visible due to height at the end of each Light List affords a means of ascertaining how much more or less the light is visible should the height of the bridge be more or less. The glare of a powerful light is often seen far beyond the limit of visibility of the actual rays of the light, but this must not be confounded with the true range. Again, refraction may often cause a light to be seen farther than under ordinary circumstances.

When looking out for a light at night, the fact is often forgotten that from aloft the range of vision is much increased. By noting a star immediately over the light a very correct bearing may be afterwards obtained from the standard compass.

The intrinsic power of a light should always be considered when expecting to make it in thick weather. A weak light is easily obscured by haze, and no dependence can be placed on its being seen.

The power of a light can be estimated by remarking its order, as given in the Light Lists, and in some cases by noting how much its visibility in clear weather falls short of the range due to the height at which it is placed. Thus, a light standing 200 feet above the sea, and only recorded as visible at 10 miles in clear weather, is manifestly of little brilliancy, as its height would permit it to be seen over 20 miles, if of any power. (See table in Light List before mentioned.)

The distance from a light cannot be estimated either by its brilliancy or its dimness.

8. Fog Signals.—Sound is conveyed in a very capricious way through the atmosphere. Apart from wind, large areas of silence have been found in different directions and at different distances from the fog signal station, in some instances even when in close proximity to it. The apparatus, moreover, for sounding the signal often requires some time before it is in readiness to act. A fog often creeps imperceptibly towards the land, and is not observed by the people at a station until it is upon them; whereas a ship may have been for many hours in it, and approaching the land. In such a case no signal may be made. When sound has to travel against the wind, it may be thrown upwards; in such a case, a man aloft might hear it when it is inaudible on deck. Under certain conditions of the atmosphere, when a fog signal is a combination of high and low notes, one of the notes may be inaudible.

The mariner should not assume—

- a. That he is out of hearing distance, because he fails to hear the sound.
- b. That, because he hears a fog signal faintly, he is at a great distance from it.
- c. That he is near it, because he hears the sound plainly.
- d. That the distance from and the intensity of the sound on any one occasion is a guide to him for any future occasion.
- e. That the fog signal has ceased sounding, because he does not hear it even when in close proximity.

Taken together, these facts should induce the utmost caution in closing the land in fogs. The lead is generally the only safe guide.

9. Tides and Tidal Streams.—In navigating coasts where the tidal range is considerable, caution is always necessary. It should be remembered that there are indraughts to all bays and bights, although the general run of the stream may be parallel to the shore.

The turn of the tidal stream off-shore is seldom coincident with the time of high and low water on the shore. In open channels, the tidal stream ordinarily overruns the turn of the vertical movement of the tide by about three hours, forming what is usually known as tide and half-tide, the effect of which is that at high and low water by the shore the stream is running at its greatest velocity.

In crossing a bar or shallow flats, the table (B) at page 146 of the Tide Tables will be found of great assistance in calculating how much the water has risen or fallen at any hour of the tide.

On coasts where there is much diurnal inequality in the tides, the amount of rise and fall can never be depended upon, and additional caution is necessary.

It should also be remembered that at times the tide falls below the level of low-water ordinary springs. This always occurs on the coasts of Europe at the equinoxes, but in other parts of the world, and especially in the tropics, such periodic low tides may coincide more frequently with the solstices. Wind or a high barometer may produce it at any time, and the amount varies with locality. When the moon's perigee coincides with the full or new moon the same effect is often produced.

10. Arrows on charts only show the most usual or the mean direction of a tidal stream or current. It must never be assumed that the direction of a stream will not vary from that indicated by the arrow. In the same manner, the rate of a stream constantly varies with circumstances, and the rate given on the chart is merely the mean of those found during the survey, possibly from very few observations.

11. Fixing Position.—The most accurate method of fixing a position relative to the shore is by angles between well-defined objects on the chart. All ships are now being supplied with a station pointer, and this method should be used whenever possible.

Two things are, however, necessary to its successful employment. First, that the objects be well chosen; and second, that the observer is skilful and rapid in his use of the sextant.

For the former, reference can be had to the pamphlet on the use of the station-pointer, which is in every chart box; the latter is only to be obtained by practice.

It will readily be seen that in war time, when the compass may be knocked away, or rifle-fire may make it undesirable to expose the person more than necessary, a sextant offers great advantages, as angles can be obtained from any position whence the objects are visible. It is this contingency that makes it especially desirable that all navigating officers should become expert in this method of fixing a ship's position.

In many narrow waters also, where the objects may yet be at some distance, as in coral harbours or narrow passages among mud banks, navigation by sextant and station-pointer is invaluable, as a true position can only be obtained by its means. A small error in either taking or plotting a bearing under such circumstances may put the ship ashore.

It is not intended that the use of the compass to fix the ship should be given up; there are many circumstances in which it may be usefully employed, but errors more readily creep into a position so fixed. In all cases where great accuracy of position is desired, angles should invariably be used, such as the fixing of a rock or shoal, or of additions to a chart, as fresh soundings or new buildings. In all such cases angles should be taken to several objects, the more the better; but five objects is a good number, as the four angles thus obtained not only prevent any errors, but they at once furnish a means of checking the accuracy of the chart itself. In the case of ordinary soundings, it is only necessary to take a third angle now and then; firstly, to check the general accuracy of the chart as above stated; secondly, to make certain that the more important soundings, as at the end of a line, are correctly placed.

Sometimes, when only two objects are visible, a compass bearing and sextant angle may be used with advantage.

In passing near a point of land, or an island, the method of fixing by doubling the angle on the bow is invaluable. The ordinary form of it, the so-called "four-point bearing," when the bearing is taken four points on the bow, and on the beam, the distance from the object at the latter position being the distance run between the times of taking the two bearings, allowing for current, gives an excellent fix for a departure, but does not ensure safety, as the point and probably the rocks off it are abeam before the position is obtained.

By taking the bearings of two points and four points on the bow, a very good position is obtained before the object is passed; the distance of the latter at the second position being, as before, equal to the distance run in the interval, allowing for current.

A table of factors, by which to multiply the distance run, to obtain the distance of the object when any number of degrees between the two bearings has been observed, is now supplied in all chart boxes.

The use of a danger angle in passing outlying rocks with land behind should also not be forgotten. In employing this method, however, caution is necessary, as should the chart be not accurate, *i.e.*, should

the objects selected be not quite correctly placed, the angle taken off from it may not serve the purpose. It should not, therefore, be employed when the survey is old or manifestly imperfect.

In fixing by the compass, it must always be remembered that two bearings only are liable to error. An absolute error may be made in either bearing observed; errors may be made in applying the deviation; or errors may creep in in laying them on to the chart. For these reasons, a third or check bearing of some other object should be taken, especially when near the shore or dangers. The coincidence of these three lines will prevent any mistakes.

Amongst astronomical methods of fixing a ship's position, attention is drawn to the great utility of Sumner's method. A Sumner line, that is, a line drawn through the position (obtained by an assumed latitude and longitude by chronometer) at right angles to the bearing of the sun as obtained from the azimuth tables, gives at times invaluable information, as the ship must be somewhere on that line provided the chronometer is correct. A deep cast of the lead at the same time may often serve to get an approximate position on the line. An early and very accurate position can also be obtained by Sumner's method, by getting a longitude by a bright star at daylight when the horizon is well visible, and another longitude by the sun when a few degrees above the horizon, or by observing two or more stars at twilight. The Sumner lines drawn through the two positions thus obtained will, if the bearing of sun and star differ three points or more, give an excellent result.

12. *Change of Variation of the Compass.*—The gradual change in the variation must not be forgotten in laying down positions by bearing on charts. The magnetic compasses placed on the charts for the purpose of facilitating plotting become in time slightly in error, and in some cases, such as with small scales, or when the lines are long, the displacement of position from neglect of this change may be of importance. The compasses are re-engraved when the error amounts to a quarter of a point, but the chart plates cannot be corrected more frequently from the impossibility of making alterations too often on one spot in a copper plate.

The geographical change in the variation is in some parts of the world sufficiently rapid to need consideration. For instance, in approaching Halifax from Newfoundland the variation changes 10° in less than 500 miles. The variation chart should be consulted on this head.

13. *Local Magnetic Disturbance of the Compass on board Ship.*—The term "local magnetic disturbance" has reference only to the effects on the compass of magnetic masses external to the ship in which it is placed. Observation shows that disturbance of the compass in a ship afloat is experienced only in a few places on the globe.

Magnetic laws do not permit of the supposition that it is the visible land which causes such disturbance, because the effect of a magnetic force diminishes in such rapid proportion as the distance from it increases that it would require a local centre of magnetic force of an amount absolutely unknown to affect a compass half a mile distant.

Such deflections of the compass are due to magnetic minerals in the bed of the sea under the ship, and when the water is shallow, and the force strong, the compass may be temporarily deflected when passing over such a spot, but the area of disturbance will be small, unless there are many centres near together.

It is very desirable that whenever a ship passes over an area of local magnetic disturbance, the position should be fixed, and the facts reported as far as they can be ascertained.

14. Use of Oil for Modifying the Effect of Breaking Waves.—Many experiences of late years have shown that the utility of oil for this purpose is undoubted, and the application simple.

The following may serve for the guidance of seamen, whose attention is called to the fact that a very small quantity of oil, skilfully applied, may prevent much damage both to ships (especially the smaller classes) and to boats, by modifying the action of breaking seas.

The principal facts as to the use of oil are as follows:—

1. On free waves, *i.e.*, waves in deep water, the effect is greatest.
2. In a surf, or waves breaking on a bar, where a mass of liquid is in actual motion in shallow water, the effect of the oil is uncertain, as nothing can prevent the larger waves from breaking under such circumstances; but even here it is of some service.
3. The heaviest and thickest oils are most effectual. Refined kerosene is of little use; crude petroleum is serviceable when nothing else is obtainable; but all animal and vegetable oils, such as waste oil from the engines, have great effect.
4. A small quantity of oil suffices, if applied in such a manner as to spread to windward.
5. It is useful in a ship or boat, both when running, or lying to, or in wearing.
6. No experiences are related of its use when hoisting a boat up in a sea-way at sea, but it is highly probable that much time and injury to the boat would be saved by its application on such occasions.
7. In cold water, the oil, being thickened by the lower temperature, and not being able to spread freely, will have its effect much reduced. This will vary with the description of oil used.
8. The best method of application in a ship at sea appears to be: hanging over the side, in such a manner as to be in the water, small canvas bags, capable of holding from one to two gallons of oil, such bags being pricked with a sail needle to facilitate leakage of the oil. The position of these bags should vary with the circumstances. Running before the wind, they should be hung on either bow—*e.g.*, from the cathead—and allowed to tow in the water. With the wind on the quarter the effect seems to be less than in any other position, as the oil goes astern while the waves come up on the quarter.
- Lying to, the weather bow and another position farther aft seem the best places from which to hang the bags, with a sufficient length of line to permit them to draw to windward, while the ship drifts.
9. Crossing a bar with a flood tide, oil poured overboard and allowed to float in ahead of the boat which would follow with a bag towing astern, would appear to be the best plan. As before remarked, under these circumstances the effect cannot be so much trusted.
- On a bar with the ebb tide it would seem to be useless to try oil for the purpose of entering.
10. For boarding a wreck, it is recommended to pour oil overboard to windward of her before going alongside. The effect in this case must greatly depend upon the set of the current, and the circumstances of the depth of water.

11. For a boat riding in bad weather from a sea anchor, it is recommended to fasten the bag to an endless line rove through a block on the sea anchor, by which means the oil is diffused well ahead of the boat, and the bag can be readily hauled on board for refilling if necessary.

**IN THIS WORK THE BEARINGS ARE ALL MAGNETIC,
EXCEPT WHERE MARKED AS TRUE.**

**THE LATITUDES AND LONGITUDES GIVEN IN THE
MARGINS ARE APPROXIMATE.**

**THE VARIATION GIVEN IN THE MARGINS OF THE
SEVERAL PAGES IS FOR THE YEAR 1908.**

**THE BEARINGS OF THE LIMITS OF VISIBILITY OF LIGHTS
AND OF THEIR SECTORS ARE FROM SEAWARD OR
TOWARDS THE LIGHTS.**

**THE DISTANCES ARE EXPRESSED IN SEA MILES OF
60 TO A DEGREE OF LATITUDE.**

**ONE CABLE IS ASSUMED TO BE EQUAL
TO 100 FATHOMS,**

**THE SOUNDINGS ARE REDUCED TO LOW WATER
OF ORDINARY SPRING TIDES.**

THE MEDITERRANEAN PILOT.

VOL. IV.

CHAPTER I.

GENERAL INFORMATION.

GENERAL REMARKS.—The portion of the Mediterranean sea described in this volume, commences at Cape Matapan on the west, and includes the *Ægean* sea, together with the adjacent coasts of Greece and Turkey as far as the island of Rhodes and Cape Alupo on the east; including also the island of Crete or Candia.

ÆGEAN SEA.—The *Ægean* sea, so named by the ancients, comprises that part of the Mediterranean, which, situated northward of Crete, is bounded on the west by the coast of Greece and on the north and east by the coasts of Turkey, and contains the numerous and interesting islands commonly known as the Grecian Archipelago.

The islands are divided into two principal groups, the Cyclades and the Sporades. The Cyclades (pronounced Kiklades), so named from their encircling the island of Delos—the birthplace of Artemis (Diana) and Apollo—belong to the kingdom of Greece. The Sporades, which derive their name from the word meaning sown or scattered, belong with certain exceptions to Turkey, and are situated chiefly on the eastern side of the sea. The exceptions are Skyros and the Skopelos islands, lying north-eastward of Eubœa, and known as the northern Sporades; these belong to Greece.

All the islands are high; many are of volcanic origin; others are composed of white marble, of which the Parian from Paros is often mentioned by ancient writers. Some are fertile and picturesque, whilst others, mostly the smaller ones, are mere masses of rock, and destitute of vegetation. Their productions consist principally of wine, oil, figs, raisins, and fruits, especially the lemon and orange; sponges are found in the surrounding waters.

The coasts of Greece and Turkey are mountainous, deeply indented by gulfs, and contain many excellent harbours. The rivers that empty into the *Ægean* sea, are more deserving of notice from their classical associations, than from their commercial importance; all are obstructed at their entrance by shoals, and few will admit boats.

Nomenclature.—In this volume, certain places in Turkey and Greece, have their ancient names, in italics, bracketed with their present names. Some places, belonging to Greece, have their present local names, in ordinary type bracketed against those which mariners are more familiar with. It is the intention to adopt these local Greek names, solely, when seamen are used to them.

Political divisions.—The line dividing the islands under the sovereignty of Greece, from those governed by, or under the suzerainty of Turkey, passes between Antikithera and Crete; Anaphi and Stampalia; Amorgos and Kinaros; Mykoni and Nikaria; Skyros and Psara; the northern Sporades and Strati. All islands between this line and the coast of Greece belong to the latter; the remainder belong to, or are under the suzerainty of Turkey.

The Greco-Turkish frontier on the mainland commences at the mouth of the river Potamul in about lat. 39° 57' N.

Population.—By the census taken in 1896, the total population of Greece and the islands belonging to Greece, amounted to 2,433,806. In addition to this, it is estimated there are 2,000,000 Greeks in Asia Minor, 400,000 in the Turkish islands, and about 3,500,000 in European Turkey. No Turkish census having been recently taken, the populations of Turkish ports and islands, mentioned in this volume, are little better than estimates. The same remark applies to the island of Crete.

Imports.—The principal imports into Greece are timber, iron, cotton, wool and silk manufactures, cotton yarn, grain, live stock, cotton, sugar, rice, salted goods, raw hides, sulphur, and tobacco. The value of the imports in 1905 amounted to 5,631,322*l*.

In 1904 the Turkish imports were valued at 27,751,000*l*.; of which 7,593,000*l*. came from the United Kingdom.

Exports.—The principal articles exported from Greece are currants, lead, olive oil, wine, brandy, oranges, lemons, figs, emery, mineral ores, valonea, silk in cocoons, tobacco, cotton, sponges, soap, and wax. The value of the exports in 1905 was 3,354,425*l*.

Greece manufactures also for home consumption, glass, paper, wrought iron, dyes, and wool.

In 1904 the Turkish exports were valued at 15,872,000*l*.; of which 6,138,000*l*. went to the United Kingdom.

Grecian mining industries.—Generally speaking, these are only carried on, on the small islands of the Cyclades and near the coast line, whence the transportation of the ores can be effected by the most simple means. The productions in 1906 were as follows:—Iron ore, 111,735 tons; Manganiferous iron ore, 130,652 tons; zinc ore, 23,732 tons; Argentiferous lead, 12,387 tons. The output of marble in 1906 amounted to 2,522 cubic metres.

Greek currency.—This consists of notes, copper, silver and gold coins. Notes and copper are most in use, silver coins are rare, and gold coins very rare. The copper coins consist of 5 and 10 leptá pieces, equal respectively to a halfpenny, and a penny nearly.

The silver coins are the 50 leptá, drachma (franc), and 5 drachmae pieces, equal to approximately 4½*d*., 9½*d*., and 4*s*. respectively.

The gold coins are 5, 10, and 20 drachmae pieces. The lowest note is one drachma, and the highest 500 drachmae.

Turkish currency.—The unit of the system for exchange is the lira or £T., a gold coin equal to 18*s*.

The silver coins are 20 piastre pieces (medjidie), equal to 3s. 4d.; the 10 and 5 piastre pieces are of proportionate value.

		£	s.	d.
500 piastres	= 25 medjidie	4	3	4
250 "	= 12½ "	2	1	8
100 "	= 5 "	0	16	8
50 "	= 2½ "	0	8	4
25 "	= 1¼ "	0	4	2

The 5 paras piece, is a copper coin equal to ¼d.

The above values are only approximate.

COMMUNICATION.—Railways.—The Greek railways connect the Peiræus with Athens, Lavrion, Corinth, Patras, Olympia, Argos, Tripolitza, Nauplia, and Kalamata. A line has also been constructed from Athens to Bralo, a distance of 125 miles, and is being extended to Larissa. Volo is also connected with Larissa and Kalamata.

In Asia Minor, railways run northward and southward from Smyrna; the former, after skirting the head of Smyrna bay, and making a detour of the western side of Mount Sipylus to Menemen, takes an easterly direction to Konieh; connecting at Afium Kara Hissar with the lines from Constantinople and Angora. The southern line proceeds southward to Ephesus and Skala Nuova, from thence eastward to Dinair, distant from Smyrna 234 statute miles; branch lines communicate with the neighbouring districts.

The only ports on the shores of the Ægean sea, in direct railway communication with all parts of the continent of Europe, are Saloniki and Dédé Agatch, which are also connected with each other; these lines unite at Nisch in Servia, and join the Austro-Hungarian railway at Belgrade.

Dédé Agatch, in Macedonia is the nearest port in direct railway communication with Constantinople.

Steam-ships.—The numerous lines of steamers render sea communication easy and frequent over the whole extent of coast and islands embraced in this volume; among the number are included the Papayani, Cunard, Moss and Leyland Companies from Liverpool; Nord-deutscher Lloyd, Deutsche-Levante, Austrian-Lloyd's, Florio-Rubattino, Messageries Maritimes de France, Fraissinet, Egyptian and Russian Mail Companies. Other smaller steamers supply means of transit between the minor ports.

Ports.—The principal ports of call, are the Peiræus, Volo, Saloniki, Dédé Agatch, Smyrna, Syra, Rhodes, and Suda.

Telegraph.—There is telegraphic communication with all parts of the world, from the ports of the Ægean sea of any importance. Chart 1, 188.

Two telegraph cables are laid from Syra to the Peiræus; the following islands are connected together, viz.:—

Tinos, Syra, Paros, Naxos, Amorgos, Nio, Sikinos, Polykandro, Santorin, Anaphi, Milo, Siphano, Serpho, Thermia, and Zea,

Khios is connected with Syra, and thence with Athens.

A cable is laid from Zea island to Ergasteria bay. Thermia is also connected with Peiræus and Syra.

Andros, Tinos, Mykoni, and Rhenea, with Syra and Eubœa.

Skyros, Skopelos, and Skiathos are also connected with the land lines of Eubœa.

Ægina is connected with the Peiræus.

Samos, with the land line at Skala Nuova to Ephesus and Smyrna.

Mityleni is also connected with the land line at Aivali.

Thaso is connected with Kavala.

Chart 1,188.

Tenedos with Khios, Lemnos, and Saloniki; also with the main line to Constantinople by a cable through the Dardanelles. A cable is also laid to Bashika bay.

Crete is connected with Syra by a cable laid from Megalo Kastron.

Cables are also laid from Khania to Zante and Megalo Kastron, from Megalo Kastron to Sitia, from Sitia to Rhodes, and from Sitia bay to Alexandria. A cable is also laid from Rhodes to Marmarice. Thus, communication may be had with the principal places in the Ægean sea and the rest of the civilised world.

For further information on this subject, *see* the descriptions of the places given in the body of this book.

Naval Dock yards and Establishments.—The principal naval dockyard belonging to the Greek Government is on the island of Salamis, near the Peiræus. There is also a naval dockyard at Poros island, on the south shore of the gulf of Athens.

The Turkish Government has no naval dockyard or establishment on the coast or islands comprised within the limits of the volume.

Crete possesses a naval dockyard at Suda bay; it is, however, practically abandoned.

DOCKS.—Athens (Salamis island), Syra, and Smyrna, are the only ports, within the limits of this volume, where floating docks, or patent slips exist, or are under construction; there are no dry docks. These will be found described in their proper places. *See* also the Admiralty Dock Book. Two dry docks are under construction at the Peiræus.

Coal.—English coal at reasonable prices may generally be obtained at any of the following ports:—Peiræus, Saloniki, Dédé Agatch, Smyrna, Scio (Khios island), Syra, St. Nikolo (Zea island), and Volo. Details are given in the descriptions of the ports named.

LLOYD'S SIGNAL STATIONS are established at Zea island and the Dardanelles.

Consular Stations.—British Consuls, Vice-Consuls, or Consular Agents are stationed at the following places, viz.:—Athens, Peiræus, Volo, Ergasteria bay (Lavrion), Saloniki, Kavala, Dédé Agatch, Dardanelles, Tenedos, Smyrna, Vourlah, Aivali, Skala Nuova, Khania, Candia, Rhithymno, Syra, Milo, Santorin, Seriphos, Zea, Mityleni, Rhodes, Samos, and Scio.

Standard Time.—The time used throughout Greece is Athens time, or 1h. 34m. 53·7 secs. fast of Greenwich. In European Turkey the time used is that of Constantinople, or 1h. 55m. 56 secs. fast of Greenwich.

WINDS.—The predominant winds in the Archipelago are from the northward, varying from north-west to north-east, and which increase in force towards the northern part; from the end of September to the end of May, these winds alternate with those from the south-western quarter, which are more frequent when the winters are mild. (*See also* Meteorological tables for Athens, Smyrna, Saloniki, Syra, and Khania, pages 340-344.)

Winds from south-east to south-south-east are more frequent towards the end of June and in July, particularly in the channels near and on the coast of Asia; these winds, which increase gradually, are generally pleasant, though foggy in March and September. At the commencement of winter, there are at times heavy gales from this quarter. The most variable weather in the Archipelago, is from the beginning of November to the end of March, and gales of wind which at times attain

nearly the force of a hurricane, are during this period, the most frequent. A gale generally happens a little before the equinox in March, the wind being always southerly, and known in Greece as "The forty saints' storm." Both south-east and south-west winds blow frequently with great force near the solstices.

The Etesian wind or "Meltem" of the Turks, is the most frequent in the fine season; it almost invariably commences about the end of March, and continues until the end of August. It blows from the north, or north-east, occasionally fresh, with a clear sky, but a misty horizon which obscures the land at a long distance, except perhaps about sunset. When the summits of the mountains are capped with greyish clouds, this wind is likely to last for some days; it moderates in the evening and freshens again in the morning.

Northerly winds blow with much force, even in summer, and are usually cold, and obscure the horizon; should it come on to blow suddenly in the day at this season, it will probably be a fine night. Summer gales are almost always preceded by calms, with a dark appearance of the sea round the horizon. From the middle of October to the latter end of March, the breaking up of the summer and winter seasons, there is a continuation of unsettled weather with frequent gales, rain, and sleet. During this period, when the sky is obscured, and the grey clouds which collect in layers on the summits of the islands and mountains of the coast, are suddenly detached, it is a certain sign of a gale.

Northerly winds are especially dangerous during the night when amongst the islands, as the weather may become overcast, with rain, hail or snow, accompanied by a short heavy troublesome sea. When any signs of these gales appear, shelter should be sought under the lee of the islands, or in the nearest port.

In March and April, the Etesian winds alternate with strong southerly winds, and in May with light breezes or calms, which are not so common in June, July, and August. In May and June, the sky is usually clear and serene, the weather fine and sea smooth, with land and sea breezes.

During September, the prevailing winds are southerly, but light, with calms. About the middle of October, a strong cold northerly wind is periodically expected followed by southerly breezes till the end of the month. In November, strong southerly winds are prevalent; and in December, a little before or after the solstice, stormy winds blow from all directions, and ultimately from the northward; in January, northerly winds are mainly prevalent.

During winter, the winds are often influenced in an easterly or westerly direction by the gulfs or inlets on either coast; on the European side, both northerly and southerly winds have a tendency to blow from the westward, and on the Asiatic side, from the eastward. Southerly winds often back round to the eastward, and blow hard between S.S.E. and E.S.E., with rain for several days; but more frequently, southerly winds suddenly shift round by east, to N.E. and North, and blow with great violence, and continue in that quarter for a long period until exhausted, seldom again shifting until completely blown out.

On changing from the southward round westward, it seldom remains for any length of time between W.S.W. and N.N.W., but should it remain in that quarter, the weather soon clears and becomes fine.

Winds from the south-west, or from the southern quarter, are not common in the northern part of the Archipelago, but in the western part they blow at times during the summer. In winter, they are accompanied by thunder and lightning, and at times change suddenly in a squall to the north with a rough sea. When the sky is charged

with clouds from the south-west, with lightning, and the barometer falling or low, the wind may with certainty be expected from that quarter, particularly during November, December, and January; at other periods, the south-west winds succeed those from the north, which back round by north-west, and west, with increased force, clear weather, and but little rain.

In general, during summer, and in fine weather in winter, land and sea breezes prevail in the different gulfs, especially in those of Smyrna, Nauplia, and Saloniki; the sea breeze, called the "Imbat," commences to enter the gulfs about 10h. a.m., and falls towards sunset; the land breeze springs up about 11h. p.m. The Imbat in the Gulfs of Nauplia and Smyrna is often strong, and in the latter it causes a short troublesome sea; but the land breeze is never very strong.

The winds on the coast of Anatolia and neighbouring islands are as follows:—In the winter months, after a north-easterly wind, the sky becomes clear for a few hours, when it again gradually darkens, and in 12 or 15 hours, a gale from S.E. or S.S.E. will probably be blowing in the Gulf of Smyrna; from S.E. in the strait of Khios; and from S.S.E. and South along the coast. It generally comes on in the evening, but sometimes at night: towards morning it blows violently, and continues often till midnight, when it is succeeded by heavy rains, which last a few hours.

The wind will then suddenly shift to the S.W. with strong and violent gusts; after this, it moderates, and becomes showery and squally, veering to West and N.W., in which quarter it seldom blows hard, when with a heavy shower of rain or hail, it veers to N.N.E. or N.E. A few hours before this change takes place, the mountain tops are enveloped in dark and heavy clouds; though at times, this does not take place until the above change of wind is effected.

The mountains of Karu burnu peninsula are remarkable for this appearance; for after the winds begin to blow, the clouds collect on their south-western side, and resemble snow, when it blows violently in the Strait of Khios.

The Gulf of Sandarli or Chandarli, northward of that of Smyrna, is remarkable for these winds, they continue thus variable during the months of November, December, January, and February. In March the weather becomes mild, in May and June the sky is clear and serene, the regular Imbat or sea breeze begins to set in, and is succeeded by the land wind. Towards the latter end of June and in July, the sirocco winds blow occasionally. About the equinox, it will rain for a day or two, accompanied with thunder, after which it becomes calm and serene, continuing so throughout October; in November it again becomes variable with strong gales.

White squalls.—The Grecian Archipelago is more particularly the scene of those sudden gusts of wind named white squalls, so called from their frequent occurrence under a cloudless sky, and their action in causing the sea to assume a white appearance. They are due to the wind rushing down from the high land on the leeward side, and striking the water at an angle when they churn up the sea and cut off the tops of the waves into a spray, which gives a peculiar appearance that once seen cannot be mistaken.

They are sometimes very violent, but their duration is short. They were particularly dangerous in the days of sailing-vessels, but now that sailing-ships have been almost entirely superseded by steamers, cause more inconvenience than danger.

Climate.—The Archipelago is very dry, the drought continuing generally without interruption from May until the middle or end of

August, when a small quantity of rain may fall to alternate again with some weeks of dry weather. November, February, and March are the rainy months; but December may often be substituted for November. The lowest degree of temperature in winter is seldom at freezing point, and the highest in summer seldom exceeds 90°.

For Meteorological tables, *see* page 340.

Barometer.—The ordinary indications precede gales, and careful attention to the barometer, which generally rises with north and easterly winds, and falls with those from the south and west, will render it almost impossible for seamen to be taken unawares. For signs of a northerly gale, when entering the Archipelago, *see* page 20.

Sea temperature.*—The high summer temperature of the surface of the Mediterranean sea is limited to a thin stratum, and then gives place to a uniform temperature, which extends downwards to the bottom. In the western basin, at a depth of 50 fathoms, the thermometer generally falls to 55° or 56°; and below this depth, there is very little change down to 100 fathoms, where it usually stands at 54° or 55°; thence to the bottom, however deep, the temperature continues constant, the water below 100 fathoms having absolutely the same temperature of 54° or 55° throughout.

In the eastern basin, the heat of the superficial stratum extends somewhat farther down; but the uniform temperature is always reached at less than 200 fathoms, and from this depth to the bottom (it may be at 2,000 fathoms), the temperature of 56° is found everywhere to prevail. In the Archipelago the temperature is also constant at about 54° or 55° in depths of 100 fathoms and downwards; the intermediate depths between 100 fathoms and the surface, range from 55° to 76°, and sometimes in the waters of the enclosed gulfs and bays even to 80° and 86°.

During winter on the other hand, the temperature is uniform or nearly so, from the surface to the bottom. It is obvious that the temperature varies with the seasons, and after the month of March, the solar influence begins sensibly to raise both sea and atmospheric temperature. It appears that a higher surface temperature prevails over the eastern basin generally, than over the western.

The above conditions, differ completely from that which prevails in Oceanic areas generally; and contrasts especially with that which is found in the Atlantic at similar depths, for there, after passing through the superheated stratum, the thermometer falls with the depth to 36°, though by no means at a uniform rate.

NAVIGATION OF THE ARCHIPELAGO.—The navigation of the Archipelago though easy, requires constant attention, and a place of shelter should always be kept in view, so that safety may be assured before dark in the event of an approaching gale, as the weather may become so thick, that amongst the labyrinth of islands, the land may hardly be seen in time to avoid it. In general, when bound up the Archipelago, if there is the least appearance of a gale from the northward, there should be no hesitation in seeking temporary shelter at the nearest anchorage, for nothing can be gained by keeping at sea, and the vessel's position may become more critical as the weather gets worse.

A vessel may always anchor under the lee of an island with northerly winds, for though at times they blow with much violence, they never shift suddenly to the southward, and there is always a sufficient interval of moderate weather to permit leaving the anchorage. It is not the same, however, with southerly winds; with these winds, a sailing-vessel should never anchor on the north side of an

Charts, Nos. 2,836a, b.

* From Nautical Magazine, 1862. Captain T. A. B. Spratt. R.N. and Dr. W. B. Carpenter, F.R.S.

island, or any land, if it can possibly be avoided, as the winds from this quarter generally shift suddenly in a squall to the north or north-east, and blow with such violence that a vessel could not get under weigh.

A steam-vessel, in case of necessity, anchoring on the north side of an island or point of land, should be in such a position as will enable her to leave with ease and facility at any moment. As southerly winds increase in force gradually, there is generally time to seek the requisite shelter.

PASSAGES.—Vessels bound from the Mediterranean to the Dardanelles, Athens, Saloniki, Smyrna, or any port in the Archipelago, should make Cape Matapan, and pass through the Elaphonisos or Cervi channel, taking care to guard against the current there, which generally sets to the westward at the rate of one mile per hour. After rounding Cape Malea, if bound to Athens, the course is westward of Belo Pulo islet for Cape Zourva, the east extreme of Hydra island, after passing which, steer midway between Cape Skyli and the western extreme of St. Georgio island, towards Athens.

When passing Belo Pulo islet in thick weather, caution is necessary as the currents are often strong and the direction is uncertain.

If bound for the Dardanelles, the route after passing Belo Pulo is through the Zea, and Doro channels, for Tenedos island.

If bound to Saloniki after passing through the Doro channel, vessels may pass either round eastward of Skyros, and the small islets of Piperi and Psathura for Cape Kassandra, or west of Skyros and through the channel between Skopelos and Skiathos.

If bound to Smyrna, the same route may be followed as that directed for the Dardanelles as far as the Doro channel thence passing northward of the Kaloyeri rocks, and either rounding well to the northward of Psara island on account of the current (*see* page 179) or passing between it and cape St. Nikolo, the north-west point of Khios island and proceeding northward of the peninsula of Kara burnu into the gulf of Smyrna.

Another route to Smyrna may be followed after passing through the Cervi channel, by shaping a course to pass through the Siphano channel, guarding against the strong and uncertain currents when near Falconera islet, and giving Cape Phillippo, the northern extreme of Siphano island, a wide berth in order to avoid the sunken rock off it (*see* page 253), and also to allow for the south-westerly current which in light northerly winds sets towards it. After passing through Siphano channel, steer for Mykoni channel, passing between Aspro islet off Syra island, and Nata islet; thence through Mykoni channel, which is $4\frac{1}{2}$ miles in width, and the south-westerly current not so strong as in the Doro. When through the Mykoni channel, steer to pass south of Khios island, through Khios strait, and into the Gulf of Smyrna.

CURRENTS.—The currents in the Archipelago are irregular in strength and direction: in general they run to the southward, but are greatly influenced by the winds, and especially in the western part. As a general rule, the currents are always stronger during and after north-easterly winds, than with those from the southern quarter.

When the winds are from north-east to east, the rapid current from the Dardanelles, passes on both sides of the island of Lemnos, and runs towards the western part of the Archipelago, and through Doro channel with considerable velocity. It runs with great strength through Steno pass (the narrow channel between Andros and Tinos islands), and through the wide channel which separates Nikaria from Mykoni, but is less rapid in Mykoni channel, which separates that island from Tinos.

On leaving these channels, and entering the south-western part of the Archipelago, it loses its velocity, and between cape Malea and Crete unites with the general westerly current, which is also more or less affected by the force and direction of the wind.

Besides the usual southerly set, there are local or eddy streams; thus to the northward of Thaso and Samothraki islands, the current has been observed to run strong to the eastward; at Tenedos, with a long continued southerly wind, the southerly current ceases for a time. In the gulf of Smyrna, and particularly during summer, the strong sea breezes force the water towards the head of the gulf, causing at times, with the fall of the wind, a westerly set of $1\frac{1}{2}$ knots an hour.

No exact law can be given with respect to these currents, more especially in the southern part of the Archipelago and in the channels east and west of Crete. It sets almost continually to the southward, but it is, at times, irregular, and depends (as elsewhere) much on the force and direction of the winds, both local, and those at a distance when strong.

Thus, southerly gales (especially in autumn, when the water brought down by rivers is at its minimum) will entirely reverse the Archipelago currents, causing a flow back to the northward, and through the Dardanelles and Bosphorus into the Black sea, instead of its usual direction out of that partly fresh water basin. Southerly and south-westerly breezes will likewise cause an easterly current in the southern part of the Archipelago, which then uniting with that from the Dardanelles, greatly increases the southerly current between the islands of Kaso and Crete, and between Scarpanto and Rhodes.

The coast of Crete is subject to variable currents, being influenced greatly by local winds, but the descending currents from the Dardanelles and the encircling current from the coast of Egypt by Syria and Karamania, unite in causing a predominating southerly current throughout the Archipelago, and south-westerly current on the coast of Crete, of from half a knot to $1\frac{1}{2}$ knots an hour. These currents have been invariably found to be superficial, having a depth of from 30 to 50 fathoms only, and decreasing in strength with the depth. The only rule, therefore, that can be given as a caution to the navigator, especially for the southern part of the Archipelago and the channels approaching it on the east and west of Crete, is to allow for a current of from one to $1\frac{1}{2}$ knots an hour in the direction of the wind, when it amounts to a fresh or even a moderate breeze; when there are such currents in the offing and open channels, there will of course be inshore eddies likewise.

Therefore, in navigating these narrow seas at night, some consideration of these local influences must be allowed as a precaution, particularly where neighbouring channels and bays may easily be mistaken for each other by a stranger approaching them, even with the best charts; more especially whilst there are so few lights to guide him from doubt and danger, and such sources of error as may exist in a total dependence upon direct courses and distances, where the currents are uncertain, and where clouds obscure the bolder landmarks and mountains indicated upon the charts of this stormy Archipelago.

TIDES.—The level of the water in the *Ægean* sea is, as in most parts of the Mediterranean, more influenced by wind than by tide; but in those places in which the rise and fall of the latter is appreciable, it is regular, especially at springs.

The effect of tide at Euripo bridge, at which place the spring tide rises about 2 feet, is very pronounced. Here, the stream runs to the northward at half ebb, and to the southward at half flood, attaining a velocity of 6 or 7 knots an hour. At neaps, the stream is irregular and

its strength only from half to one knot an hour, and at times but little movement is experienced (*see* page 75).

At the entrance of Talanta channel in the vicinity of the Likhades islets, the tides correspond with those of Euripo, but are less in strength, the flood running in at from $1\frac{1}{4}$ to 2 knots an hour, and ebb setting out and to the northward at the same rate; there is a sensible rise and fall here affected at times by the wind (*see* page 134). At Volo, the rise and fall at full and change of the moon, is about 8 inches.

At Smyrna, the water level rises with a southerly wind and falls with a northerly. The variation in the level is from 3 to $3\frac{1}{2}$ feet, but at Khios, and places adjacent, it is only about 2 feet (*see* page 203).

On the coast of Crete, in fine weather, at about the full and change of the moon, the rise and fall is from 6 to 8 inches.

Variation of the compass.—The general direction of the lines of equal westerly variation in the *Ægean* sea, between the meridians of 22° and 29° East, is nearly North and South *true*; ranging in amount at the present time, [1907], from $5\frac{1}{4}^{\circ}$ in the western part to $3\frac{3}{4}^{\circ}$ in the eastern. The annual decrease is about 6'.

Riding lights of light-vessels.—Turkish light-vessels carry no riding lights to indicate which way the vessel is swung.

Greece has no light-vessels at present.

Pilots.—Greek pilots give their steering orders in accordance with the French system, *i.e.*, Port means that the ship's bow is to turn to port, &c.

Official Notices.—Referring to Notices to Mariners and Light lists, seamen should know that in Greek notices, the bearings are magnetic when so stated, or when the variation is given in the notice; otherwise the bearings are true. The bearings are given *from the light*.

In Turkish notices, the bearings are *true* and *from the light*.

CHAPTER II.

SOUTH-EAST COAST OF GREECE FROM CAPE MATAPAN TO
SPEZZIA ISLAND WITH THE ISLANDS OF KITHERA AND
ANTIKITHERA.

MANI PENINSULA.—The most conspicuous of the mountains from north to south on the Mani peninsula, which forms the western side of the Gulf of Lakonikos, are Mount St. Elias or Makryno, ancient *Taygetum*, 7,897 feet high, in lat. $36^{\circ} 56' N.$, its summit being nearly always covered with snow; Mount Mavro, 6,374 feet high, $3\frac{1}{2}$ miles to the southward; Mount Kubenova, 4,827 feet high; Sanghia mountain, 3,800 feet high; Mount Miniátika, 3,530 feet high; and Mount Kakovuni, 3,000 feet high; the latter being $8\frac{1}{2}$ miles to the northward of Cape Matapan.

Chart, 1,685.
Var. $5^{\circ} 30' W.$

In clear weather the lofty mountains may be sighted at a great distance; Mount St. Elias is, however, frequently enveloped in clouds, excepting during the dry summer months. With south-easterly winds, the mountains are usually covered with clouds.

CAPE MATAPAN (TÉNARON), ancient *Tenarium*,* is the termination of a peninsula 3 miles in length, joined to that of Mani on the north, by an isthmus only 3 cables in breadth, which separates the little ports of Marmari and Kaio; this peninsula consists almost entirely of dark grey marble. For $1\frac{1}{4}$ miles from the extremity of the cape, the land rises gradually from south to north to a height of 1,025 feet at Matapan mountain and then falls abruptly towards the isthmus; therefore, when seen from eastward or westward at a distance of 12 miles or more, it appears as a triangular or wedge-shaped island. When the distance is so great that the high land of the cape is below the horizon, Mount Miniátika, which is 3,530 feet high, flat-topped, and 10 miles northward of the cape, will probably be seen, and its southern slope must not be mistaken for the high land of the cape, which will become visible on a nearer approach.

Chart, 3,372.
Lat. $35^{\circ} 25' N.$
Long. $22^{\circ} 29' E.$

When immediately southward of the cape, its extremity cannot be recognised unless the lighthouse can be distinguished, on account of the high land behind it, but on the west are the steep cliffs of Cape Grosso forming regular terraces, and to the north-east Kisternes hill, 344 feet high, rising immediately above Kisternes point is conspicuous.

Cape Matapan is steep-to and clear of danger, and may be approached within a short distance, there being 80 fathoms a quarter of a mile from the point. The current in its vicinity generally sets westward nearly a knot an hour. When under sail, with strong northerly winds and near the coast, it is necessary to be prepared for the baffling and heavy squalls which blow from the high land.

Chart, 2836a.

* This promontory was formerly celebrated as a safe refuge for fugitive criminals. Near Kisternes point, north-eastward of the cape, are the ruins of a temple of Neptune, and in the woods surrounding it, is a cavern which was supposed to be one of the entrances to the infernal regions; other legends are also connected with it.

Chart, 3,372.
Var. 5° 30' W.
Lat. 35° 23' N.
Long. 22° 29' E.

In fine weather, landing may be effected on the eastern side of the cape, immediately under the lighthouse.

LIGHT.—From a masonry lighthouse, near the extreme of Cape Matapan and at an elevation of 145 feet above the sea, is exhibited a *fixed and flashing* light, showing a *white fixed* light with a *red flash every two minutes*, and visible in clear weather, from a distance of 16 miles. It is obscured by Kisternes point when bearing to the southward of S. 49° W. Reported irregular 1905.

Katergaki rock, 6 feet high, lies close to the shore half a mile to the north-eastward of Cape Matapan.

GULF OF LAKONIKOS (KOLOKITHIA).—The base of the chain of mountains extending southward from Mount St. Elias together with the peninsula of Mani, form the western shore of this gulf, and the base of the chain forming the peninsula of Elos constitutes the eastern shore.

Cape Santa Maria, the south-western point of the island of Elaphonisos, bears from Cape Matapan E. $\frac{3}{4}$ N., and the entrance to the gulf between the two is 23 miles wide; from thence, the gulf extends northward about the same distance, narrowing to about 8 miles off the Helos plain at its head.

The western shore of the gulf is rugged and irregular. The land at the head consists of alluvial soil brought down by the Iris or Vasilli river (ancient *Eurotas*), and the lofty mountains of Arcadia are seen at the head of the valley. The peninsula of Elos with its arid and sterile mountains, on the eastern side, fitly correspond with those of Mani on the west. At the north-eastern angle of the gulf, are the heights of Mount Kurkula, 2,990 feet high and about 2 miles from the shore, the chain continuing southward to Mount Krithina, 2,571 feet above the sea, and terminating 4 miles further south-eastward in Cape Malea or St. Angelo, as it is indifferently called. The principal port in the gulf is Githion, in the north-western corner. There are no out-lying dangers, the water is deep, and the winds are similar to those in the Gulf of Kalamata. (*See Mediterranean Pilot*, Vol. III.)

Winds and weather.—Fair weather was generally experienced during the survey of this gulf by H.M.S. *Goldfinch*, between the months of April and August 1902 inclusive. The wind was usually from the westward and south-westward during the early part of the summer; setting in daily at about 11 a.m. with considerable strength, especially on the Mani peninsula, covering the mountain tops with clouds, and usually moderating at night; but occasionally continuing without a break for 3 or 4 days, reaching home to the eastern shore and causing a considerable sea. These winds are generally accompanied by a haze.

Easterly and north-easterly winds seldom prevailed on the western side, but frequently occurred during the day on the eastern shore of the gulf. On one occasion in the middle of April, a strong and steady gale from the north-eastward, lasting 36 hours, accompanied by thick haze, set in without warning from the barometer, which remained high and steady throughout.

Southerly winds never blew with any violence, and seldom reached the head of the gulf. Their presence in the offing was apparent from the long swell setting in from that direction.

Light northerly winds, refreshing in their coolness, accompanied by a very clear atmosphere, rendering the distant lofty mountains clearly

visible, occurred at rare intervals. Rain only fell on 3 occasions in a period of 5 months. The almost entire absence of clouds throughout the day and night was a marked feature, which as midsummer approached caused this treeless and stony coast to become much dried up and superheated. Caution is necessary, therefore, in exposing oneself to the sun; and the use of a sun helmet is always necessary during the summer months.

Chart, 3,372.
Var. 5° 30' W.

Fogs seldom occurred, and did not last long. As a rule they only formed in the morning calms, before the heat of the day commenced.

Port Asomato.—Kisternes point, a mile and a quarter north-eastward of Cape Matapan, is a well-defined point separating the two little bays known as Ports Asomato and Vathy. Kisternes hill 344 feet high, is a sharp rounded summit near the point. On it once stood a fine temple dedicated to Neptune.

Plan on 1,685.
Lat. 35° 24' N.
Long. 22° 29' E.

The entrance to Port Asomato is less than a mile northward of Cape Matapan; it is about 2 cables wide at the entrance and recedes 3 cables, having three little bights at its head. The depths are from 10 to 17 fathoms in the middle, with 3 or 4 fathoms close to the shore on either side, but towards the head it shoals more gradually. It affords good shelter from all winds except those from between South and S.E., and the hills around this port not being so high as those about Port Vathy, it is not subject to such heavy squalls as the latter. There is a small village about a third of a mile from the head of the bay, and a marble quarry beyond it; the marble blocks are transported down to the port on rough timber tramways, and there embarked.

Port Vathy is inferior to Port Asomato, for, though well protected from seaward by Kisternes point, it is very narrow, the water deep, and it is subject to heavy squalls from all directions. The anchorage, in 11 fathoms at the head of the harbour, is fair, but as it is only about 130 yards wide, a vessel of any size must either moor very taut, or head and stern.

Port Kaio (ancient *Psamatus*), 3 miles northward of Cape Matapan, is open to the eastward, and $2\frac{1}{2}$ cables wide at the entrance. The head of the port is separated from Port Marmari on the western side of Matapan peninsula, by the narrow isthmus before mentioned, and on a hill on the western side of the port, is an old tower or castle 445 feet high. The point on the northern side of the entrance is broad and of a reddish colour, and the port may be known at a distance by the break in the land at the isthmus.

Plan, 3,342 (839).

This port is superior to either Ports Asomato or Vathy, although the anchorage is much confined by the extensive Harbour shoal.

Harbour shoal, is an extensive rocky shoal about 300 yards long in a south-westerly direction and less than 100 yards broad, with general depths of 7 to 9 fathoms and deep water all round. It lies in the centre of the port, and on it are two rocky heads.

The outer of these, with a depth of 24 feet, lies in the way of ships entering the port; from it Entrance point bears S. 39° E. 320 yards distant.

The inner rock, with a depth of only 12 feet, lies S.W. by W. 195 yards from the outer rock, with Entrance point bearing S. 70° E. 390 yards distant. These shoal heads, which are steep-to, can generally be distinguished in day time by the appearance of the water over them.

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Plan, 3,342.
Var. 5° 30' W.

Lat. 36° 25' N.
Long. 22° 29' E.

The extremity of the land to the southward, seen open eastward of Entrance point, bearing S. 25° E. clears the Harbour shoal to the eastward.

Light.—A *fixed white* light is occasionally shown from Entrance point when a steamer is expected at night.

Directions.—No special directions can be given for the avoidance of these dangers when using the port: the chart should serve as the best guide.

If intending to anchor in the south-western part of the bay, when coming from the southward, Entrance point can be rounded at a distance of about half a cable, anchoring when the house on the beach, in the eastern corner of the sandy bay, forming the southern bight, becomes visible.

Anchorage.—The best anchorage is in the southern bight of the port in about 17 fathoms, protected from easterly winds, where it would be necessary for all but a small ship to moor; anchorage can also be found northward of the Harbour shoal, where the water is deeper.

Communication.—It is a regular port of call for the weekly coasting steamers to and from the Peiræus; there is a small coasting trade here.

Supplies.—No supplies can be obtained here. A few houses are scattered around the shores of the bay, the most conspicuous being the buildings of a former monastery on the northern shore.

The village of Port Kaio, which is somewhat hidden from the anchorage, is situated on a hill 500 feet high to the southward. The inhabitants at this wild mountainous district obtain a scanty livelihood from their flocks, and a little corn and fruit which they are able to cultivate, in carefully-prepared terraces on the rocky mountain slopes.

Chart, 3,372.

COAST.—The coast northward of Port Kaio is high and rugged to Demaristika point, the mountains descending abruptly to the shore line, which is steep-to, depths of a hundred fathoms being reached within 2 cables off it.

There is a small cove fit only for small craft, about 1½ miles north of Port Kaio.

At Demaristika point the coast trends to the north-north-westward for 2½ miles, and then to Kolokithia bay, 11 miles from Port Kaio.

The mountain ranges of Kakovuni and Sanghia, 2 miles inland, are here plainly seen, as also the scattered villages perched on their lower slopes with their many towers, a common feature of all the houses on the western side of the gulf.

There are a few indentations used only by coasters, deep water being found close inshore. Port Nimphi, formed by a narrow cleft, may be considered the most important.

Kolokithia bay is 11 miles northward of Port Kaio, the coast between being high, rugged, and barren, and the water deep close inshore. The bay, 1½ miles wide, is open to the south-eastward, falls back between high land, a mile north-westward, and, being much exposed, should not be resorted to unless in case of necessity. A bluff promontory projecting in a south-easterly direction, forms its north-eastern side, and the water in the centre of the bay is deep. The termination of the promontory takes the name of the bay, and about 3 cables southward of it, is a shoal with 4 fathoms water. It is not a

good anchorage, being exposed and surrounded by high mountains, from which brief squalls frequently descend. The best anchorage is in the north-eastern bight, with the extremity of the promontory of land in the centre of the bay, bearing W.N.W. $3\frac{1}{2}$ cables, the squalls from the Sanghia mountains to the westward being less severely felt here.

The little town of Kotronas is in the north-eastern angle of Kolokithia bay.

Caution.—The squalls down the mountain slopes, all along the eastern side of the Mani peninsula, are especially severe, rendering it dangerous for boats.

During the summer months the sea breeze, from the westward, generally sets in by 11 a.m., and lasts till past sunset; its advent is frequently made known by the mountain tops becoming covered with clouds.

There are several villages here and also up the valley to the north-westward, formed by a break in the mountain range, which leads to the Pass of Dhikora.

PORT SKUTARI, northward of Kolokithia bay, and separated from it by the bluff reddish promontory just mentioned which terminates eastward in Cape Stavri, affords the best anchorage in the gulf. The entrance is open to the south-east and more than one mile wide; thence the bay recedes north-westward $2\frac{1}{2}$ miles to the head, where there is a sandy beach. It is well sheltered from all winds except those from south-east, to which, however, it is entirely open, and as the bottom is mud, it is considered a secure anchorage.

Plan, 3,351.
Lat. $36^{\circ} 40'$ N.
Long. $22^{\circ} 30'$ E.

Cape Paganía is the south-eastern extreme of the promontory forming the north-eastern side of Port Skutari, which promontory is a nearly flat and table land, 520 feet high; the cape itself is round, bold, and 393 feet high. At the entrance of the port between the two capes, there are 60 fathoms water, which decreases to 20 fathoms at three quarters of a mile from its head, and at a quarter of a mile from the beach there are 7 fathoms mud.

The anchorage affording the best shelter is in the north-west corner, in 11 fathoms, with Refuge bluff bearing S. 15° W. distant 6 cables, and the chapel on Skutari hill N. 32° W. Squalls from the high mountain slopes from the westward are less severely felt here.

Paganía rock, with 5 fathoms least water, and 8 fathoms round it, lies on a rocky ledge which extends in a south-easterly direction for 2 cables from Cape Paganía. When coming from the northward the cape should not be rounded nearer than half a mile.

Skutari town is on the slope of a hill at the head of the port. There is no water to be obtained. The country of Mani, inland, though rugged, grows sufficient barley and beans to support its inhabitants, and silk is an article of export.

Coast.—From Cape Paganía, the coast trends one mile in a northerly direction to Cape Kremidara, and then recedes to the westward, forming a semi-circular bay 4 miles wide. This bay has an irregular coast line, and affords no shelter. A road through a deep and tortuous gully in the mountains, leads to the town of Tsimova, near Port Limeni, in the Gulf of Kalamata.

Mavrovuni point is steep-to, and may be approached within a quarter of a mile. Off its southern extremity is a rock 2 feet high almost connected to the shore, and on which the sea nearly always

Chart, 3,372.
Var. 5° 30' W.

breaks. The village of Mavrovuni, on rising ground above the point, is conspicuous from all directions.

Plan, 3,342.

GITHION (GYTHIUM), the port of Sparta, stands on the coast at the foot of a hill 6 miles northward of Cape Paganía; it contained in 1896, 4,061 inhabitants, and is the principal seaport of the district, of which Sparta, about 25 miles distant to the northward, is the capital. It is sheltered from southerly winds and sea, by Cranæ islet about a quarter of a mile in length east and west, which is itself connected by a causeway with the shore a cable distant; on the islet, is a small church built in the form of an ancient temple.

On a hill northward of the present town, are vestiges of the ancient town, and about $1\frac{1}{2}$ miles to the northward, on a hill near the shore, are the ruins of the castle of Kaki Skala.

Trade.—The imports consist mainly of grain, cloths and cotton stuffs, building materials and timber, the approximate value of the imports being about 50,000*l*.

Communication.—There is communication by steamer about three times a week between Githion and Athens, Patras, and certain intermediate ports; and there is telegraphic communication with the European system.

The Deutsch Levante steamers call here monthly on their passage from Batum to Hamburg.

Mails arrive daily from Athens and Europe, overland *viâ* Sparta.

Supplies of fresh provisions can be obtained here with a little notice beforehand, and fresh water suitable for boilers only, from a stream running into the sea three quarters of a mile northward of the town between a break in the earth cliffs. Fruit is plentiful in the season.

Anchorage.—The best anchorage is in about 17 fathoms 3 cables northward of Cranæ islet, off the northern end of the mole head forming the inner harbour, alongside which small coasters unload. Small vessels may anchor closer to Cranæ islet. Easterly winds cause a nasty sea in the roadstead. The water deepens suddenly off the coast bank, and attention to this is necessary. Cranæ islet may be rounded closely.

Lat. 36° 45' N.
Long. 22° 34' E.

LIGHT.—From an octagonal white lighthouse, 76 feet high, on Cranæ islet, is exhibited, at an elevation of 89 feet above the sea, a *fixed and flashing* light, showing *white fixed* with alternately a *white* and a *red* flash at intervals of *one minute*; it is visible in clear weather from a distance of 15 miles.

Chart, 3,372.

Directions.—Githion or Marathonisi being in the north-western part of the Gulf of Kolokithia, a vessel bound to that anchorage should be guided by the truncated peak of Xyli, conspicuous on the eastern side of the gulf; whilst the two promontories of Capes Stavri and Paganía will be recognised on the western side, the former being the higher of the two; farther northward, Mavrovuni point, sometimes called Monte Nero, a mile southward of the town, and which has on it a village, will appear of a reddish colour. Cranæ islet should be given a berth of one cable in passing, and a vessel should then anchor as already directed. In approaching the anchorage and the coast northward of it, do not stand close in without attention to the lead, on account of the shallow coast bank, which abreast of the anchorage, extends $1\frac{3}{4}$ cables from the shore. When coming from Elaphonisos channel, Mount St. Elias is nearly in line over the anchorage.

Coast.—The coast northward of Githion trends to the north-eastward past the clifly point $1\frac{1}{2}$ miles from the town, above which are the ruins of the castle of Kaki Skala. Chart 3,872.
Var. $5^{\circ} 30'$ W.

Trinisi are three small black islets or rocks, $2\frac{1}{2}$ miles north-eastward of Githion; the outer islet lies $3\frac{1}{2}$ cables from the shore, with which and with each other, they are connected by shallow water, sheltering an anchorage in-shore of them very useful to coasting vessels.

Iris or Vasilli river (ancient *Eurotas*).—From near Trinisi, the low marshy shore forming the head of the Gulf of Kolokithia, trends eastward 8 miles to the base of Mount Kurkula. The river Iris runs through the valley into the sea by several mouths, the principal being about 3 miles eastward of the Trinisi; there is but little water on the bar, but within, it is navigable some miles for flat-bottomed boats. The valley in the interior is richly cultivated. The shore along the head of the gulf should not be approached within a mile, and attention should be given to the lead.

Mount Kurkula stands at the north-eastern angle of the gulf, where the low shore terminates. It is round-topped, 2,990 feet above the sea, and is easily distinguished.

The Twin Peaks form a prominent object one mile south of it and 2 miles from the shore line; the southern peak is the highest, and is 2,561 feet high. From the Twin Peaks this range rapidly falls to the southward in low flat hills to the plain of Phiniki.

Coast.—The coast at the termination of the sand beach trends to the southward for about 9 miles to Cape Xyli; it is composed of earth cliffs and sand beaches with scattered rocks close inshore, but is clear of all dangers at a short distance off the shore. Lat. $36^{\circ} 47'$ N.
Long. $22^{\circ} 47'$ E.

Kokina tower stands on the edge of a cliff near the head of the gulf and is difficult to distinguish until close to.

Elea.—A small seaport of rising importance, is easily distinguished by the conspicuous tower standing on the edge of the cliff, 135 feet high, on Mulaos point, with an off-lying islet 40 feet high beneath it. When approaching from the westward the houses of the town will also be seen; it is the principal seaport of this district.

Communication.—A steamer calls weekly from the Peiræus.

Supplies may be obtained from Mulaos, a village situated on the eastern slopes of Mount Kurkula, about 6 miles distant from the port by a good road.

Anchorage.—As the anchorage is exposed and the depths somewhat irregular, vessels should anchor north-west of the town in not less than 12 fathoms, taking care to avoid the shallow spit that extends from the low sandy point northward of the settlement. In 1902 it was contemplated to improve the anchorage for the coasting craft by building a breakwater.

Phiniki plain is well cultivated, with numerous villages extending across the Elos peninsula to Monemvasia; it is occasionally partly flooded during the winter.

XYLI BAY is open to the southward, and is included between the two converging Capes Xyli and Arkhangelo, which are $2\frac{3}{4}$ miles apart; the whole bay thus formed, is again divided into two inner bays; viz., Xyli bay on the northern, and Arkhangelo bay on the south-eastern side, each point thus covering a separate anchorage. Plan on 1,436

Plan on 1,436.
Var. 5° 30' W.

The northern anchorage is sheltered on the western side by a promontory projecting 2 miles southward, with Xyli peak rising to a height of 1,056 feet near its centre. When seen from the southward, the mount appears like an island in the form of a truncated cone, and at a distance of 12 miles the white rocks on its summit seem almost like the ruins of a castle, but when viewed from the westward, its appearance is changed; the land southward of it is comparatively low, ending at Cape Xyli with a round head like an islet joined by an isthmus to the base of the mount.

Lat. 36° 40' N.
Long. 22° 50' E.

Port Arasma.—The head of Xyli bay is called Port Arasma, and is bordered by rocky shallow water, the depth of 5 fathoms being nearly a quarter of a mile from the shore. Here a mountain stream with but little water runs into the sea. A lane of deep water runs into the bay at the entrance; in entering, give Cape Xyli a fair berth, steer in and anchor on the western shore with the mount bearing about West in from 18 to 12 fathoms, sand. The rugged summit of Mount Kimatisa, less than 2 miles back from the north-eastern shore of the bay, is 1,715 feet in height; the base of this mountain, with the high land southward of it, forms the eastern shore, which is skirted all round by rocks and shallow water, and should be given a wide berth.

About a mile inland from the north-eastern shore is a remarkable flat-topped pillar rock, 1,015 feet high with steep sides, accessible only from the land side, known as the Acropolis. It is a natural stronghold, and on it will be found the ruins of a chapel, and the remains of former buildings.

Vestiges of the ancient town of Blitra, now submerged, can be seen beneath the water, off the low shallow point on the north-eastern side of the bay.

Trade.—There is little trade here, the port of Elea absorbing it all.

Arkhangelo bay, about 4 miles from Port Arasma, is semi-circular, about three-quarters of a mile wide, and open to the north-west; it is sheltered from south-westerly winds by Cape Arkhangelo, a tongue of land with a hill on its extremity, projecting about half a mile north-westward. A little church and some houses, serve to mark a cove at the head of the bay, fit for small coasting craft. Mount Astratigos, 1,400 feet high, rises from the eastern shore of the bay. The water is deep, there being 18 fathoms about 2 cables from the shore; from this, it shoals very quickly to 5 fathoms at the edge of the rocky coast bank.

During heavy rains, several streams discharge themselves into the sea between Port Arasma and Arkhangelo bay, but in summer they are usually dry.

Chart, 3,372.
Lat. 36° 37' N.
Long. 22° 52' E.

Coast.—From Cape Arkhangelo, the coast continues south-eastward for 8 miles to the entrance of the narrow channel between Elaphonisos island and the main. At $1\frac{5}{10}$ miles from the cape, is the bluff point of Lyriotiki with a round tower on it, and between them are three little rocky islets near the shore, with shallow water extending off about 3 cables; farther southward are the Klaro islets, north-eastward of which, coasters find shelter. At 3 miles south-eastward of the islets is the small projecting point of Kulendi with a tower on it; the shore then becomes lower, and 3 miles farther south-eastward is the channel separating Elaphonisos island from the mainland.

Anchorage in 12 fathoms of water may be obtained three-quarters of a mile to the northward of Kulendi point at half a mile from the shore.

ELAPHONISOS (CERVI) ISLAND is triangular in form with a deep bay on its southern side, each side of the island measuring about 3 miles; the hills are of moderate height, that in the centre being 906 feet high. It is barren, uncultivated, and destitute of water. The north-western side of the island is sinuous and bordered by shallow ground extending in places half a mile from the shore, and on which are several islets and rocks named Poriki; this tide of the island should not be approached too closely.

Plan on 1,436
Var. 5° 30' W.

Saraceniko bay.—The southern side of Elaphonisos island, between Cape Santa Maria the south-western point, and Phrango point the south-eastern, forms the semi-circular bay of Saraceniko, about a mile deep. The head of the bay is shallow, and on the eastern side of it is the round projecting headland of Point Helena, having the appearance of an island, but which is connected with the shore north-eastward of it by a low sandy neck. A vessel requiring immediate shelter from northerly or north-easterly winds, may anchor here, off the beach in from 8 to 15 fathoms water, but the holding ground is uncertain and Vatika bay is a better anchorage.

Cape Santa Maria should not be rounded too closely, as a shoal extends a cable from it. Phrango point is cliffy, clear of danger, steep to, and may be approached at discretion, but Point Helena is bordered by a shoal extending more than half a cable from the shore; between the two, is the little bay of Phrango. From Phrango point, the eastern coast of the island is irregular and trends northward nearly $3\frac{1}{2}$ miles, terminating in a low tongue.

One and a half miles north of Phrango point is a small bay known as Lephki; H.M.S. *Goldfinch* found this a useful and convenient anchorage on more than one occasion with strong westerly and south-westerly winds, when the anchorages in Saraceniko bay and Vatika bays were undesirable.

The northern end of Elaphonisos island is low, sandy with rocky projections, and surrounded by shallow water; it is separated from Petri isle and the sandy point of the mainland on the north (which are also bordered by shoals), by a tortuous channel about half a cable in width, carrying about 6 feet water and only fit for boats. The current sets strongly through this channel. Elaphonisos was once connected with the mainland, the channel which now separates it, being then an isthmus.

VATIKA BAY, (ancient *Sinus Beaticus*), between Elaphonisos island on the west, and the coast of the Morea distant $3\frac{1}{2}$ miles, on the east, is open to the south, about $4\frac{1}{2}$ miles deep, and semi-circular at its head; it is surrounded by an amphitheatre of hills, the most lofty peak to the northward being Mount Aspro, 2,180 feet high, between the foot of which and the low swampy shore at the head of the bay, is cultivated land, whilst on the west a chain of heights extends southward to the sea. The bay is frequented by vessels bound either eastward or westward and encountering strong adverse winds; with southerly winds, a heavy sea sets in, but they always give sufficient warning of their approach to enable vessels to clear the bay.

Petri isle, in the north-western angle of the bay, and on the northern side of the entrance to the boat channel between Elaphonisos island and the main, contains many specimens of petrifications of small branches of trees and oyster shells, in every stage of change from the original state to solid stone. There is a village on the site of an ancient town on the eastern shore of the bay, but little in the shape

Lat. 36° 31' N.
Long. 23° 0' E.

Plan on 1,436.
Var. 5° 30' W.

of fresh provisions can be procured; the town of Gliki, the largest near the shores of the bay, will be seen half way up the mountain; the swampy plain at the head abounds with hares.

The eastern shore of Vatika bay is irregular and bordered by rocks and shoals; in passing near St. Elia, the eastern entrance point of the bay, the white sandy bottom with black rocks can at times be distinguished.

Niapolis, the principal town in the neighbourhood, lies on the north-eastern shore of the bay, and is of rising importance. It is a telegraph station and port of call for steamers weekly from the Peiræus, Zante, and certain intermediate ports. A fair supply of fresh provisions can generally be obtained.

Anchorage.—Vessels anchor as convenient off Niapolis in about 15 fathoms, or at the head of Vatika bay, and in easterly or north-easterly winds a good berth may be obtained a little more than half a mile from the shore in 10 or 12 fathoms, sandy bottom. The bottom on the eastern side of the bay is uncertain, being rocky in places.

In a westerly or south-westerly gale, or even with the wind at S.S.W., it is stated by local seamen that the best anchorage is about a quarter of a mile eastward of Petri isle, where indeed they consider a vessel to be safe in any wind, the sea forced through the channel between Elaphonisos and the main being here met by the current setting in the opposite direction, which reduces its effect to a swell only; consequently, vessels in this position are said to ride easily at their anchors, for, although squalls may reach the vessels, the cables have no undue strain on them; eastward of this anchorage, the sea breaks heavily.

Directions.—Vessels may round Cape Malea at any convenient distance, as the water is deep close in-shore, but it is advisable with northerly or north-easterly winds, when under sail, to give it a fair berth in order to avoid the light winds, calms, and heavy squalls, which occur under the high land. At night, the *fixed* and *flashing* light on Cape Spathi, the northern end of Kithera, is a good guide through the Elaphonisos channel. There is no danger in entering Vatika bay, as the shore on either side may be approached to the distance of half a mile.

In bad weather, or before a northerly gale, Mount Krithina, 2,571 feet high and 4 miles north-westward of Cape Malea, is always shrouded by dense masses of clouds which whirl and roll down the sides of the mountain with great velocity; the wind follows quickly and with great force. Vessels, therefore, having to bear up from the Archipelago, especially at night, should be under easy sail to enable them to beat into Vatika bay without having to shorten sail to the squalls from the high land.

In rounding the cape from the westward with the wind northward of West, in all probability a northerly or north-easterly wind will be found blowing in the Archipelago.

Coast.—Half a mile south-eastward of St. Elia point, is St. Elia rock surrounded by shallow water extending 2 cables from the shore, and a mile eastward of it is the little chapel of St. Elia; thence, the high coast trends south-eastward nearly a mile to Zobolo point, $3\frac{1}{2}$ miles westward of cape Malea. Between these headlands, the high coast recedes northward, forming a light two-thirds of a mile deep.

CAPE MALEA or St. ANGELO, the south-eastern extreme of the Morea, is the termination of the Elos peninsula, and is a high, bold, round headland, rising from deep water to a height of about

Lat. 36° 26' N.
Long. 23° 12' E.

Chart, 1,685.

1,970 feet; it is clear of danger, steep-to, with from 25 to 30 fathoms not far from it. (See page 28.)

Chart, 1,685.
Var. 5° 20' W.

LIGHT.—At 42 yards within the north-eastern extreme of the land, and rather more than a mile northward of Cape Malea, is exhibited from a square lighthouse 49 feet high, at an elevation of 131 feet above the sea, a *fixed white* light, visible in clear weather, from a distance of 17 miles from the bearing of N. 10° W., through west, to South.

Lat. 36° 27' N.
Long. 23° 12' E.

Vessels coming from the westward, will not therefore open out this light until the southern extreme of Cape Malea is abaft the beam.

Current.—The current in the vicinity of Cape Malea generally sets westward about one knot an hour, but its strength and direction vary with the wind. Sailing-vessels entering the Archipelago, should not close the land near the cape with the view of avoiding the current, as the chance of a steady breeze is more favourable in the offing.

KITHERA (CERIGO) ISLAND is of an irregular oval form, about 16 miles in length north and south, 10 miles in extreme breadth, and has an area of about 80 square miles. It is mountainous, arid, and of volcanic formation, the greatest elevation being on the western side, where Mount Kithera attains a height of 1,668 feet, whilst on the eastern side Makri hill is only 63 feet less. There are several caves, of which the two principal are the beautiful stalactite grottoes of Santa Sophia and Mylopotamo; the caves are noted for porphyry. The coasts of the island are high, scarped, with small off-lying islets here and there, surrounded by deep water and the western and south-western sides are irregular with precipitous cliffs.

The climate is temperate and healthy, but the island is liable to violent whirlwinds which often cause considerable destruction to vegetation, destroying trees and vineyards. Sheep and goats find pasture in the mountains; the produce of the valleys are grapes, wine, oil, melons, figs, fruit, hemp, cotton, and honey, all of which are exported. Cereals are grown for home consumption, great numbers of hares, rabbits, and turtles are caught, and in autumn, quantities of quails and other birds. The fisheries are productive and form a large item in the commerce of the island. The population of Kithera island in 1896 was 11,812. The principal town is Cerigo, Tzerigo or Kithera near Kapsali bay, at the southern end of the island; another town and port is St. Nikolo on the south-eastern side. Potamo, the principal town in the northern part of the island, is connected by telegraph with the mainland. The roads are generally good and lead through the different districts.

Cape Spathi, 4½ miles southward of Elaphonisos island, consists of salient steep cliffs, 328 feet high, level on the summit, but gradually increasing in height to the southward.

Chart, 3,372.

Rock.—Close off the extremity of the cape is a rock with 3 fathoms on it, surrounded by deep water; this is the only off-lying danger, and the cape may be passed at a distance of half a mile.

Landing.—During north-easterly winds when landing is impossible at Santa Panaghia, passengers and goods for the northern district are landed at the cave on the west side of Cape Spathi; care must be taken to avoid the rock nearly awash which is right off it, and upwards of 2 cables from the shore.

Chart, 3,372.
 Lat. 36° 22' N.
 Long. 22° 57' E.
 Var. 5° 20' W.

LIGHT.—On Cape Spathi, 570 yards within its northern extreme, is a circular stone tower 82 feet high, which exhibits, at an elevation of 362 feet above the sea, a *fixed white light varied by a flash of ten seconds duration every minute*, and visible in clear weather from a distance of 20 miles; beyond a distance of 12 miles the *flashes only* are visible. The light is visible from the bearing of N. 68° E. through east, south, and west, to N. 34° W. On the first bearing named, the light is seen over the land southward of Cape Karavugia; on the last, over Dragonera islets and the eastern end of Kithera.

Cape Karavugia (Karavàs).—At 1½ miles westward of Cape Spathi, is Cape Karavugia, with a low level black islet, northward of it, 7 feet high and surrounded by shoal rocky ground.

WEST COAST.—The western coast of Kithera is high, sinuous, and clear of off-lying hidden dangers; small islets lie here and there at from half a mile to a mile from the land, but the water near them is deep. Vessels lying to under the lee of the island during strong north-easterly winds, should be under easy sail, as heavy whirling squalls often blow from the high land.

From Cape Karavugia, the coast southward is bold and steep, skirted by straggling rocks, landing being difficult.

Platanos rock, 32 feet high, is situated off the point of land forming the northern extreme of Pallikari bay; it appears as a well-defined conical rock, when viewed from the northward and southward.

Pallikari bay, which is free from danger, affords a temporary anchorage only, and should be quitted at once on the approach of a westerly wind, which creates a turbulent sea all along this coast.

Cape Ruphugialos is the northern termination of the remarkable perpendicular dark cliffs, which attain a height of 800 feet, and have a sheer descent to the sea, situated one mile northward of Phana Kopia bay. Off the cape is an islet 38 feet high, and immediately southward of it an extensive ravine forms a break in the cliffs, with a shingle beach at the head of the inlet. A rocky islet, 30 feet high, lies on the northern side of the entrance.

Axini islets.—Are two small rocky islets; the northern one about 1½ miles S.W. by S. ¼ S. from Cape Ruphugialos, appears as a low rocky ledge, 22 feet high; the southern islet, 36 feet high, 6 cables S.S.E. from the northern islet, is close in shore. Foul ground extends for nearly a quarter of a mile to the N.W. of this latter islet, and there is also a rock on which the sea nearly always breaks a quarter of a mile W.N.W. from it.

There is a narrow passage between the Axini islets with uneven depths, but it is not recommended.

Phana Kopia bay to the eastward of the Axini islets affords the only anchorage hereabouts, and was frequently resorted to by H.M.S. *Goldfinch*; it is moderately protected from the westward, but the backwash, caused by the swell striking the cliffs to the northward, creates a confused sea and there is generally a swell.

Anchorage.—On coming from the northward the best guide to the anchorage is to pass Cape Ruphugialos at a distance of about half a mile, anchoring in 16 fathoms before south Axini islet is shut in by the point of land extending to the northward, which forms the western arm of the bay. Platanos rock will be seen open of the land southward

of Cape Ruphugialos as a further guide. If coming from the southward, north Axini islet may be rounded closely to the northward. Chart, 3,372.
Var. 5° 20' W.

The slopes of Mount Kithera, 1,668 feet high (the highest part of the island), descend abruptly to the southern shore of the bay, and landing is difficult, except during fine weather. A good path leads to the village of Mitata, which is not visible from the sea.

Lindo islet, $3\frac{1}{2}$ miles southward of the northern Axini islet and half a mile from the shore, is 92 feet high, with its low northern part nearly insulated at about one-third its length, and off its southern and western sides are small detached rocks. Chart, 1,685.

The coast hence to Kapsali bay, is high, bold, and cliffy, with numerous caves, and about 2 miles from the bay is a cove and landing place named Melidoni bay, exposed to the southward.

Strongilo islets, are two rocky islets, 3 cables apart, about one and a quarter miles south of Lindo islet, the southern one is 110 feet high, and the northward 10 feet less. Detached and sunken rocks exist between them. Lat. 36° 10' N.
Long. 22° 55' E.

Caution.—Lindo and Strongilo islets lie in the track of vessels navigating between Kapsali and Githion. Being comparatively small and low, they are difficult to make out under the high land, especially at night, and a wide berth should be given them. The features of the coast are not very decided, and it is therefore not easy to fix the position of a vessel when Ovo island is invisible.

Grunia rocks, $2\frac{1}{2}$ miles south-eastward of the Strongilo islets and near the eastern point of Melidoni bay, are two rocks 5 or 6 feet above water with a patch of sunken rocks a quarter of a mile eastward of them. Grunia rocks are $1\frac{1}{2}$ miles north-westward of Cape Trakhili, the western entrance point of Kapsali bay.

KAPSALI BAY, at the southern end of Kithera, is semi-circular, about 7 cables wide, open to the southward, and falls back 7 cables to the northward. In the north-eastern part of the bay, a little promontory, on which is a small white lighthouse, separates two little coves. The eastern cove, near the shore of which is the Lazaretto, is circular, shallow and rocky, and its entrance only 55 yards wide; the other is much larger and used by coasting vessels. Plan on 1,685.

Mount Kapsali north-westward of the bay is flat topped and 1,574 feet high, with a conspicuous monastery on its north-western extreme, from which the mountain descends abruptly in steep rocky terraces to the shore line; Kentdivi hill immediately northward of the bay, circular in form, with a white house on its summit rises to a height of 1,088 feet above the sea.

Cape Trakhili (Trakhylion), on the western side of the entrance, is the termination of a tongue of cliffy land projecting south, and then south-east, thus forming an arm which shelters the bay from south-westerly winds and sea.

Cape Grosso, the name of which expresses its appearance, is the eastern entrance point; the land around Kapsali bay is high, with a slightly irregular shore, and a shingle beach at his head. The water is everywhere deep, and from 25 fathoms in mid-channel at the entrance, it decreases gradually in depth to the head of the bay.

Plan on 1,685.
Var. 5° 20' W.

LIGHT.—On the western part of the little promontory, at the head of Kapsali bay, is a white turret 19 feet high, from which at an elevation of 82 feet above the sea, is exhibited a *red fixed* light, visible in clear weather from a distance of 8 miles, from the bearing of N. 26° W. through north to N. 37° E., but it is masked when in line with Ovo islet.

The town of Cerigo, Tzerigo, or Kithera, is on a hill near the north-western side of the bay, and contained, in 1902, 1,500 inhabitants. In front of the town is a large Venetian fortress about 590 feet above the sea, which commands the town and bay and is conspicuous from seaward.

Communication.—There is weekly communication with the Peiræus and certain intermediate ports.

The Austrian Lloyds steamers call here fortnightly on the outward passage from Trieste to Constantinople, connecting with the principal Greek and Turkish ports.

The town is in telegraphic communication with the general European system.

Port Regulations.—The island of Kithera has its own jurisdiction, and is treated as a separate dependency by the Hellenic government; the usual port and quarantine regulations should be observed.

Aspect.—From the westward, the town appears perched on the hill, and a white mill on Cape Grosso, the only building in that vicinity, cannot be mistaken.

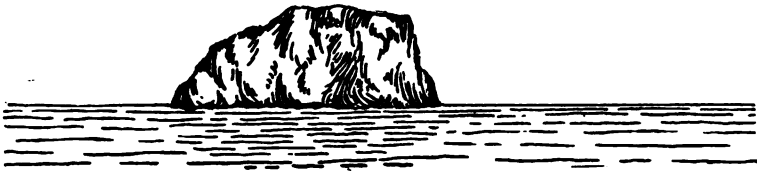
Anchorage.—The best anchorage is 2 cables S.S.W. of the lighthouse, in 16 fathoms, mud and sand. Small vessels moor under cover of the lighthouse point and opposite the village of Kapsali. There are 4 fathoms near the point, and the water shoals gradually to the beach. The anchorage is safe with all off-shore winds, but it is exposed to those from the southward and south-eastward which send in a heavy sea, and, although the bottom is mud and sand, the anchors do not hold; consequently, it is not safe except under favourable circumstances. The squalls from the hills are often violent.

Chart, 1,685.
Lat. 36° 5' N.
Long. 33° 0' E.

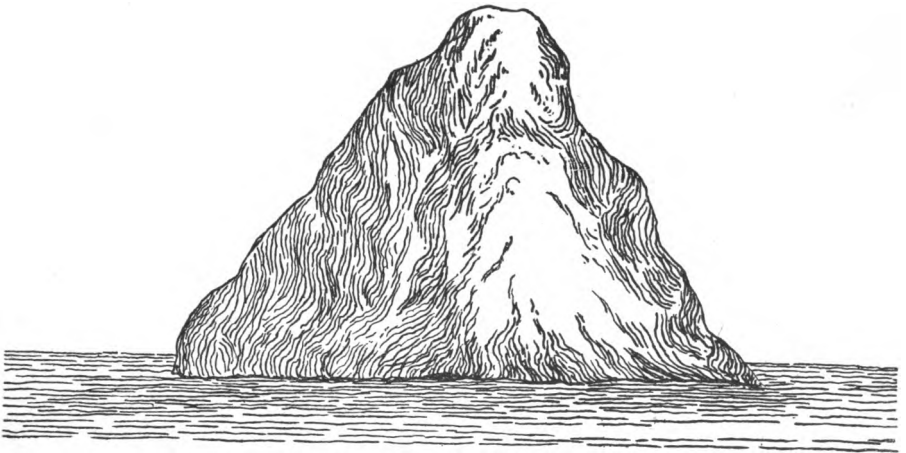
Ovo islet, (ancient *Epla*), is about 6 cables in length north and south, 647 feet high, and its bare rounded surface appears, as its name implies, like a large egg. The islet is steep-to, the water around it being very deep; it lies 2 miles southward of Kapsali bay, and serves as a mark for that anchorage.

Cape Kapela, 2 miles eastward of Cape Grosso of Kapsali bay, is the south-eastern extreme of Kithera; the high steep coast, rising about 300 feet above the sea and skirted by rocks, thence trends northward for 5½ miles to St. Nikolo bay.

Kupho islets are two small rocky islets, the larger of which is 33 feet high, flat, about a cable in diameter, and lies E. by S. ½ S., 2¼ miles from Cape Kapela; the smaller islet bears S. by E. ¾ E., 4 cables from the larger, and 2 cables off its southern side is a rock with 1½ fathoms water. With the exception of this 1½-fathoms rock, the Kupho islets are clear, the water around them deep, and in case of necessity, a vessel with a commanding breeze may pass between them, where there are 50 fathoms; during foggy weather or calms, caution is necessary as the currents are strong and irregular.



OVO ISLET. West-8 Miles.



OVO ISLET SSW THREE QUARTERS OF A MILE.

ST. NIKOLO BAY.—At $5\frac{1}{2}$ miles from Cape Kapela, the coast turns and trends eastward for about $1\frac{1}{2}$ miles to Mothoni point, forming St. Nikolo bay, which is half a mile deep and open to the south and south-east. There is anchorage here with all off-shore winds; but, being exposed to those from south-east, vessels roll heavily, and wrecks have taken place when surprised by wind from that quarter.

On the northern shore of the bay is a castle or fortress near the entrance to Port St. Nikolo.

Mothoni point is low, shelving, and surrounded by rocks at the distance of a cable; from the point, the land rises gradually northward to Mount St. Georgio, 1,248 feet high, with a small church near its summit. The mount slopes rapidly on its western side, and about half-way down, is a counterscrap of reddish earth.

Westward of the castle, the shore is beach and steep cliffs with scattered rocks, and here are the ruins of the ancient town of *Kythera*, ancient tombs, and other remains.

The Anchorage is about 4 cables south-westward of the castle, in 17 fathoms, sand and mud; here Dragonera islet is shut in by Mothoni point.

Port St. Nikolo.—On the eastern side of the castle, is an inlet open to the south-west, $1\frac{1}{2}$ cables deep, half a cable wide at the entrance, where there are 6 fathoms water, widening within, and forming an excellent little basin with 4 fathoms. Here vessels moor in safety, and the port is the best in the island. The village is on the north-western side of the port and a good road leads to the town of Cerigo (already mentioned), about 10 miles distant, or two hours' drive.

Communication.—Steamers call at Port St. Nikolo.

Directions.—Vessels entering St. Nikolo bay, are generally from the Archipelago. After having made Cape Malea and Makri hill, 1,605 feet high, the highest summit on the eastern side of the island, Mount St. Georgio, a short distance south-eastward of it, will be sighted, and on nearing the port, the Dragonera islets, which should be left on the starboard hand. Mothoni point should not be rounded nearer than $1\frac{1}{2}$ or 2 cables, when anchor as before directed.

Dragonera islets.—Dragonera, the southernmost and larger of the two, is nearly oval in form, about $6\frac{1}{2}$ cables in length E.S.E. and W.N.W., and 120 feet high. Near its eastern extreme, is a rock above water and shoal ground beyond it; here the sea breaks heavily with north-easterly winds. The islet is $3\frac{1}{2}$ cables from the nearest part of Mothoni point, and is connected with the mainland north-westward of the islet by a bar with 3 and 4 fathoms water over it, the latter depth being nearly in mid-channel.

Anti Dragonera, 4 cables northward of Dragonera, lies parallel with it and is somewhat smaller, being only 5 cables in length and 93 feet high; it is clear on all sides, and separated from the mainland by a channel 2 cables wide with 13 fathoms water, which may always be used by keeping nearest to the islet in order to avoid the rocky point of the mainland abreast of it.

These islets are covered with scanty grass and low scrub, affording pasturage for a few sheep and goats, but there is no water. From the eastward, Dragonera islet is first seen; on a near approach the appearances of the two are very similar, both having a fall in the middle producing two hummocks.

Plan on 1,685.
Lat. $36^{\circ} 13' N.$
Long. $23^{\circ} 5' E.$
Var. $5^{\circ} 20' W.$

Plan on 1,685.
Var. 5° 20' W.

Chart, No. 1,685.

Lat. 36° 16' N.
Long. 23° 5' E.

Anchorage.—There is temporary anchorage for small vessels between the two islets in from 11 to 20 fathoms water, with the advantage of three passages for leaving.

North-east coast.—From the Dragonera islets, the north-eastern coast of Kithera trends in a north-westerly direction nearly straight to Cape Spathi, a distance of 11½ miles; it is generally high with a few sandy spots, has no off-lying dangers, and the water all along is deep.

Makri islet.—The islet of Makri, about 2 miles north-westward of Anti Dragonera, 95 feet high and 7 cables in diameter, lies under Makri hill close to the shore. Its southern part is connected to the coast by a shallow rocky bar with only 2 feet water, which acts as a perfect breakwater during southerly winds to the little harbour of Makri north-westward of the islet. The southern end of the islet is low, and a reef of rocks above water extends off about half a cable. On the south-eastern side, is the smaller islet of Ophidi, with 10 fathoms water between.

Makri harbour.—Coasting vessels find shelter in Makri harbour, and there is some small coasting trade, for the convenience of which, a stone pier has been constructed in the south-western part of the port near the town; it affords a good berth for one large vessel, and is sheltered from all winds except those between North and East.

Anchorage.—A good berth is in 12 fathoms, midway between the island and the main, with the northern extremity of Makri island bearing about N. 60° E., 3 cables distant.

Santa Panaghia.—At 5½ miles north-westward of Makri islet, is the beach and village of Santa Panaghia, the skala or landing place for the town of Potamo in the interior; it may be recognised from seaward by the village on the shore, with a tower southward of it. Cape Spathi, the north extreme of Kithera, is about 3½ miles farther north-westward (*see* page 21).

Communication.—Steamers call here from the Peiræus weekly.

Telegraph.—The submarine cable from Niapolis in Vatika bay is landed here, Potamo being a telegraph station.

Anchorage.—The anchorage is in about 12 fathoms off the town.

ANTI KITHERA (CERIGOTTO) ISLAND.—At the distance of 17 miles S.E. by S. ¼ S. from Cape Kapela (the south-eastern point of Kithera), is Cape Kephali the northern end of Antikithera (ancient *Ægilia*), a narrow rocky island, 5½ miles in length N.N.W. and S.S.E., nearly 2 miles wide in the middle, and gradually narrowing to the extremes. The island is hilly, and about 2 miles from the southern end is 1,230 feet high; it has a sterile aspect, the inner valleys are, however, cultivated. The coast is iron-bound, with steep, inaccessible cliffs, and no sand is to be seen. The population in 1896 was 494.

Pori islet.—Four miles north-westward of Antikithera, are the Pori and Poretti islets and dangers. Pori islet, the farthest from Antikithera, is the larger, being about 7 cables in length, north-east and south-west, 410 feet high, steep-to, and bearing N. ¾ W. distant 4 miles from Cape Kephali, the north extreme of Antikithera.

Vythi rock, with 4 fathoms on it and deep water around, lies North, distant 8 cables from the western end of Pori; the soundings are 40 fathoms between the two.

Poretti islet, situated $1\frac{3}{4}$ miles W.S.W. from Pori islet, is about 2 cables in diameter, 130 feet high, cliffy on all sides, with a rock above water at its western end, and steep-to all around; between the two islets, the depths are from 40 to 48 fathoms.* Chart, 1,685.
Var. $5^{\circ} 10'$ W.

Nautilus rock.—This rock, on which His Majesty's sloop *Nautilus* was wrecked in 1807, lies $1\frac{1}{4}$ miles S. $\frac{1}{2}$ E. from Poretti, and 3 miles N.W. $\frac{1}{2}$ W. from Cape Kephali of Antikithera. The rock is $1\frac{1}{2}$ cables in extent east and west, in some parts 9 or 10 feet above the sea, and from a distance has the appearance of scattered rocks, being very pointed and rugged; the depths around are from 20 to 30 fathoms in all directions at half a cable from the rock. At the eastern end, is a shallow spot about a quarter of a cable in extent.

One-third of a mile north-eastward of Nautilus rock, is a rocky uneven bank, of from 4 to 12 fathoms water, about half a mile in diameter, and a small patch of $3\frac{1}{2}$ fathoms to the north-westward of the 4-fathoms spot; between these banks and Nautilus rock, the depths are from 34 to 40 fathoms.

Cape Kephali, the northern extreme of Antikithera, is formed of red cliffs, 630 feet high, and steep-to; about 4 cables W.N.W. of the cape, is the little islet or rock of Psira, a cable in diameter, with 19 fathoms water between it and the cape. Lat. $35^{\circ} 54'$ N.
Long. $23^{\circ} 16'$ E.

The western coast of Antikithera, is high, rugged, clear of danger, with deep water close-to. Camarella creek, a rocky indentation in the coast, is at times used by boats during strong easterly winds.

Cape Apolitares, the southern extreme, is a level projecting point about 80 feet high, steep-to, and 16 miles N.W. $\frac{1}{4}$ N. from Agria Grabusa, near the north-western extreme of Crete. Chart, 2,836a.

The eastern coast is clear, but not so high as the western; there is a small bay on the south-eastern side, but Potamo about $1\frac{1}{4}$ miles south-eastward of Cape Kephali, is the only port in the island.

PORT POTAMO, 3 cables wide at the entrance, and 5 cables deep, is open to the north; it extends southward between high rocky shores, narrowing at two inner points, within which it forms a nearly oval space about 2 cables in extent N.E. by N. and S.W. by S. At the entrance the depth is 20 fathoms; in the inner part, from 10 to 6 fathoms. The village of Potamo is at the south-western part of the port, and a white fort stands on a hill on the south-eastern side. Plan on 1,685.

Cape Kastro, the east entrance point, is formed of high, round, steep cliffs, on which are the ruins of Paleo Kastro. At $1\frac{1}{2}$ cables off the north-eastern face of the cape, are the Thermoni rocks, 30 feet high, with shallow water extending southward from them, but leaving a narrow passage 5 fathoms deep between them and the shore rocks.

With any sea at the entrance, sailing-vessels entering the port should carry sufficient sail to ensure steerage way; with strong northerly winds, a heavy dangerous swell sets in.

CHANNELS.—Three channels lead from the westward to the Aegean sea, each named from the island on its northern side. The Elaphonisos channel, the northern, is the narrowest; Kithera channel, Chart, 2,836a.

Chart, No. 2,836a.

* A singular horizontal mark 7 feet above the water, and precisely the same all round Cerigotto, Pori, and Poretti, much resembling a high-water mark in places subject to regular tides, is worthy of notice. The rock being worn away to the depth of 2 inches, so uniformly straight and horizontal attracts the eye in a moment. It is said that in winter the water is at times higher than usual but never reaches this mark.

Chart 2,836a.

the middle, is the most intricate; and Antikithera channel, the southern, the widest and clearest of danger.

Chart, 1,685.
Lat. 36° 24' N.
Long. 22° 58' E.
Var. 5° 20' W.

Elaphonisos (Cervi) channel, although the narrowest, is the most direct for vessels from the westward, and is chosen in preference to the others, as it has the advantage of the lights on Cape Matapan, and on Cape Spathi at the northern end of Kithera. With favourable winds, after passing Sapienza island and rounding Cape Matapan, steer for Cape Spathi light, leaving it about 2 miles to the southward, and continue eastward, but, in a sailing-vessel, do not pass too close to Cape Malea for fear of getting becalmed (*see* page 21). This channel is much frequented, and many vessels pass through it daily. The state of the weather in the Archipelago may thus be learnt from passing vessels. In the Elaphonisos channel, it often happens that sailing-vessels from the westward approach those from the Archipelago, each before the wind, when it becomes necessary to watch and consider which wind is likely to have the mastery. The channel is clear of danger, except for the 3 fathoms rock off Cape Spathi, as described on page 21.

With north-easterly winds, work up under the lee of Kithera so as to avoid the current, and, if necessary, lie-to, or anchor. The occasional anchorages are, Pallikari, Phana Kopia, and St. Nikolo bays in Kithera, and Vatika and Saraceniko bays on the mainland.

Lat. 36° 5' N.
Long. 23° 7' E.

Kithera (Cerigo) channel.—Should a vessel from unfavourable winds or other causes be so far to the southward as to render it advisable to take this channel, Ovo islet, described at page 24, should be the guide. By day, with a fair wind, pass on either side of Ovo, and southward of the Kupho islets. At night, pass southward of Ovo, and steer eastward with the islet bearing W. by N.; when the high land at the eastern end of Kithera bears westward of North, a vessel will be eastward of the Kupho islets, and may steer as convenient. Cape Spathi light will open out on a N. 34° W. bearing, and Cape Malea light when bearing N. 10° W. In working through this channel, keep nearer Kithera than Pori islet and check the vessel's position by bearings of Ovo islet, Kapsali bay light, and the high land at the eastern end of Kithera.

Chart, 2,836a.

Antikithera (Cerigotto) channel, between the island of this name and Crete, is the widest and without impediment. The Madara Vuna or White mountains of Crete, about 8,100 feet high, and nearly always capped with snow, are seen at a great distance. In taking this channel, vessels should keep Antikithera island on board.

Chart, 1,685.

MOREA, EAST COAST.—From Cape Malea (page 20), the high bold southern termination of the Elos peninsula, the east coast of the Morea trends in a general north-north-west direction for 16½ miles to the islet and town of Monemvasia; the shore between is irregular, with only two or three isolated rocks close in, and the water deep. Cape Kamili, 6½ miles from Cape Malea, is a small low promontory with a hummock on it, said to resemble the back of a camel. The *fixed white* light on Cape Malea, will be lost sight of when it bears eastward of South.

The town of Monemvasia is conspicuous from seaward, and the coast thence trends north and north-east 6 miles to Cape Ieraka, and then about N. by W. ½ W. 52 miles to the head of the Gulf of Nauplia; it is all irregular with deep water, and no shelter or good anchorage until near the head of the gulf. Nothing can be more rugged or inhospitable in its general appearance than the shore of the Morea from Cape Malea northward, and along the west side of the Gulf of Nauplia, which is all high and mountainous. Mounts Saphlaurus, Sevetila, and Zavitsa, rise

respectively 2,458, 3,622, and 3,190 feet above the sea, immediately over the coast; the former mountain is about half-way between Monemvasia and Nauplia, and the latter 7 miles from the head of the gulf.

MONEMVASIA.—The town of this name with a population in 1896, of 495, stands on an islet 9 cables in length east and west, or at right angles to the general line of coast, to which it is connected by a rocky ridge, over which a bridge 536 feet in length, has been constructed on 14 small arches. The castle is on the summit of the islet, and the town on its south-eastern face, occupying one-third the length towards the east end, is enclosed between two walls descending from the castle to the sea; the houses rise one above the other, and are intersected by narrow intricate streets. Many of the buildings, of Venetian construction, are now in a ruinous state; there is little or no trade.

Chart, 2,836a.
Lat. 36° 41' N.
Long. 23° 10' W

Plan on 1,436.
Lat. 36° 41' N.
Long. 23° 4' E.

At 2 miles in-shore on the mainland, Mount Lakanas rises 1,960 feet above the sea.

LIGHT.—A square masonry tower, 23 feet high, is erected on Cape Monemvasia, from which a *red fixed* light is exhibited, at an elevation of 54 feet above the sea, visible in clear weather from a distance of 8 miles.

Temporary anchorage during summer will be found to the northward of the bridge, in from 15 to 18 fathoms water, sand and weeds. In the event of a southerly or south-westerly gale with a falling barometer off Cape Malea, the sea here will be comparatively smooth, though the squalls blow over the low neck of land with great violence, and a vessel taking shelter should be prepared for a sudden change of wind to the northward of west, with a continuance of heavy squalls (*see* page 7).

Communication.—There is weekly connection with Nauplia by a small steamer. Monemvasia is also a telegraph station.

Port Paleo.—At 2½ miles northward of Monemvasia, is Port Paleo, a little bay with anchorage for small vessels in 4 fathoms water, sheltered from all northerly and westerly winds. There is no town here, but about half a mile westward from the head of the port and near the shore, are the ruins of Paleo Monemvasia, the ancient Epidaurus Limera.

Kremidi bay, about 1½ miles westward of the cape of the same name, is nearly half a mile deep, 6 cables wide at the entrance, with from 6 to 19 fathoms water, and sheltered from all northerly and westerly winds, but open to the south and south-east.

Cape Kremidi bears N.E. ¾ N., and is distant 2½ miles from Cape Monemvasia; a bank with depths under 10 fathoms extends one-third of a mile south-westward from the cape, and at a distance of 1½ cables therefrom, the depth is 5 fathoms.

Lat. 36° 43' N.
Long. 23° 5' E.

Cape Ieraka is a prominent headland bearing N.N.E. ½ E., distant 3 miles from Cape Kremidi, the coast between falling back one mile and containing the little islet of Daskalio.

Chart, 1,685.

Port Ieraka (ancient *Zarax*), 1½ miles north-westward of the cape of that name, is difficult to make out on account of its narrow entrance, which between Cape Kari and Point Kyphanta, its south-east and north-west entrance points respectively, is only 3 cables wide, with high land around it. It is open to the north-eastward, and on the west side of the entrance are the extensive ruins of the Acropolis of Zarax. At a third of a mile within the entrance, the width is reduced

Plan on 1,436.

Plan on 1,436.
Var. 5° 10' W.

Chart, 2,836a.

to one cable; the port then trends west-north-westward for a quarter of a mile, diminishing in breadth with a depth of 7 to 2 fathoms water, mud bottom, and fit only for small craft. The port thence leads into a large shallow lagoon, with a staked fishery; there is no village.

Leonidi, or Plaka, with a population of 3,683 in the year 1896, stands about $1\frac{1}{2}$ miles back from the shore, midway between Cape Ieraka and the head of Nauplia gulf.

LIGHT.—A *red fixed* light is exhibited at an elevation of 36 feet above the sea from an iron pole 20 feet high at Leonidi; it should be visible in clear weather from a distance of 5 miles.

Communication.—There is a Custom-house at the port, and steamers from Peiræus and Nauplia occasionally call.

Leonidi is a telegraph station.

Lat. 36° 46' N.
Long. 23° 47' E.

Karavi, a small barren islet or rock, 28 miles N. 49° E. from Cape Malea, derives its name from its likeness at a distance, to a ship under sail. It is 110 feet high, steep-to on all sides and almost inaccessible; in fine weather it is frequented by fishermen, who state that the finest fish are to be caught here.

BELO PULO (PARAPÓLA), lying in the track of vessels bound to Athens, is N.W. by N. 10 miles from Karavi islet, and its south end is 31 miles N.E. by N. $\frac{1}{2}$ N. from Cape Malea. The islet is 2 miles in length N.N.W. and S.S.E., about 700 feet high, with a sunken rock on either side of its north end; on rounding Cape Malea, it appears like an egg cut in two, though on a nearer approach, this appearance alters. It is difficult of access, and is uninhabited, except by the lighthouse keepers, though a hermit formerly dwelt here; it offers no attractions to passing vessels.



Belo Pulo. S.W. by W. 15 miles.

LIGHT.—From a square tower, 33 feet high, or the north-west point of Belo Pulo is exhibited at an elevation of 367 feet a *white flashing* light, showing a flash of *nine seconds* duration *every minute*; it is visible in clear weather from a distance of 26 miles, but is obscured over Karavi from the bearing of N. 12° W. to N. 35° W.

Falconera, the third islet of the group, is 600 feet high, and bears 14 miles E. by N. from Karavi; it is only occasionally sighted by vessels on the route to Athens, but on the direct course to the Doro channel it is more often seen. A sunken rock lies at its west end. It is uninhabited, but visited by fishermen.

Caution.—The current at times runs strongly in the vicinity of these islets, and raises a cross sea; sailing-vessels should therefore pass them at a prudent distance.

Chart, 1,518.

The GULF of NAUPLIA (ARGOLIKOS) from between the island of Spezzia Pulo on the east, and Cape Sabbatiki on the west, trends in a north-north-west direction 27 miles to the low shore of the

plains of Argos at its head. It is bounded on either side by high mountainous land, the coast line on the west being a little irregular and interspersed with low shore, whilst that on the east has several bays, projecting points, and islands. In the central part, the water is 450 fathoms deep, but all over the head of the gulf within a distance of about 4 miles of the shore, there are from 20 to 6 fathoms, and vessels if necessary, may anchor in any part of it, on mud or sand bottom.

Chart, 1,518.
Var. 5° 10' W.

Astros is a fortification standing on a rocky promontory projecting from the plains of the same name, on the west shore of the Gulf of Nauplia, and 9 miles southward of the town of Nauplia. It has no port, but a vessel might drop an anchor for temporary purposes with off-shore winds. The village is small, and here the second Greek Congress was held, in the month of April, 1823.

LIGHT.—A *red fixed* light, elevated 77 feet above the sea, is shown from a square masonry tower, 23 feet high, situated on the cape to the south-eastward of the Acropolis of Astros.

Telegraph.—Astros is a telegraph station.

Caution.—The soundings between Cape Astros and Cape Purno, on the western side of the gulf, are reported to be shoaler than shown on the chart.

Argos.—At about 3 miles inland from the head of the gulf, and 5 miles north-west of Nauplia, on the west side of the large and fertile plain of Argos, is the town of the same name, with a population, in 1896, of 9,980. Here are the scattered remains of ancient Argos, and on a hill 936 feet above the sea and west of the town, is the Acropolis of Larissa, formerly a place of some strength.

Argos is on the line of railway from Corinth to Tripolitza, and a branch goes to Nauplia.

Myli.—On the shore on the west side of the gulf opposite Nauplia, and under Mount Pontinus, 582 feet high, is the village of Myli. The shallow ground, which from Nauplia extends all round from the head of the gulf, prevents a near approach in a vessel of large draught, and in anchoring the lead should be the guide. The south wind is here felt to its full extent, but the holding ground is good. Myli is on the line of railway from Argos to Tripolitza.

Plan, 1,308.

NAUPLIA, commonly called *Napolid di Romania*, is on the eastern side and near the head of the gulf, and on the site of the former town, one of the most ancient in Greece. It stands upon the north side of a table land 282 feet high, which projects from a steep lofty ridge named Palamidi. The streets are narrow, but straight, and the principal one divides the town into two parts, connecting the two squares, and terminating at the land gate. The larger square is mostly occupied by barracks and coffee-houses. Some of the houses are large and comfortable, but the majority are small and crowded, though apparently clean and neat, with some good shops.

Lat. 27° 34' N.
Long. 22° 49' E.

The town has two fortresses, one of which stands on the summit of the precipitous ridge of Palamidi, south-east of the town, 719 feet high, and inaccessible on all sides except at one point on the east, where it is connected with a range of barren hills. The second fortress, that of the Acro-Nauplia, stands on the table land south of the town, at the foot of the Palamidi. Nauplia was the seat of Government after it fell into the hands of the Greeks, till 1832, when it was removed to Athens.

Plan, 1,308.
Lat. $37^{\circ} 34' N.$
Long. $22^{\circ} 49' E.$
Var. $5^{\circ} 10' W.$

The landing quay is on the north side of the town, where the shore forms a well-sheltered bight with a general depth of from 13 to 23 feet, nearly up to the quay. There is also a mole built on the rocks off the Custom-house. The little isolated rocky islet of Burgi, on which is a fort and prison, is about a quarter of a mile north-west of the town.

The fortress of Palamidi can be distinguished from a vessel soon after passing Spezzia, and the Acropolis of Larissa and the town of Argos when a few miles farther up the gulf.

LIGHTS.—Upon Panagia point (the name given to the south-west extreme of the peninsula), is erected a pole attached to a hut, from which is exhibited at a height of 37 feet above the sea, a *fixed red* light visible seaward 4 to 5 miles in clear weather, over an arc of 270° .

A *fixed* light is exhibited from the end of the Custom-house mole, which shows *green* to seaward and *red* over the port.

The Anchorage at Nauplia is in from 7 to 9 fathoms, mud bottom, at any convenient distance westward and south-westward of the town; vessels of light draught may anchor off the mole, as in southerly winds, Panagia point breaks the sea to a great extent. East of the mole, the water is shallow and the air is not so pure. In addition to the bank with depths under 5 fathoms, which follows round the head of the gulf at the distance of a mile, there is a patch of hard ground with 4 to 5 fathoms water on it, the south-east extremity bearing $W. \frac{3}{4} N.$, distant $8\frac{1}{2}$ cables from Fort Burgi. Some of the boulders on these patches are 6 or 7 feet in height. Large vessels should therefore not anchor with Fort Burgi, bearing eastward of $E. \frac{1}{2} N.$ Although a nasty short sea gets up with southerly winds, making it uncomfortable for ships' boats, large vessels lie here all seasons.

Bank.—A bank with a least depth of 6 fathoms, hard bottom, lies S.W. by $W. \frac{1}{2} W.$ distant 7 to 8 cables from Fort Burgi. Large boulders were reported to have been seen in this position, with a depth of 5 fathoms over them, but the examination in 1899 by H.M.S. *Stork* failed to discover them.

Buoy.—A small mooring buoy is moored $3\frac{1}{4}$ cables N.W. by $W.$ from Panagia point.

Population.—The town in 1896 had a population of 5,955.

Supplies.—Fresh provisions are plentiful and cheap.

Communication.—Steamers run daily to the Peiræus, in addition to which, regular connection is kept up with Kithera island, Patras, and certain intermediate ports.

By a branch line from the town of Argos, Nauplia has railway communication with Corinth, Athens, Patras, and Tripolitza.

Nauplia is a telegraph station.

Trade, Shipping.—The chief exports from Nauplia consist of tobacco, cheese, oil, olives, and sultana raisins, valued in 1898 at 32,000l. The imports are grain, rice, coffee, sugar, timber, copper, iron, cloth and cotton textiles, dried fish, and glassware valued at 31,300l.

In 1898, 365 vessels entered the port, with an aggregate tonnage of 13,558 tons.

Coal.—No stock of coal is kept here, but it can be obtained from the Peiræus by giving a week's notice. The best plan is to telegraph or write to the Consul there, who will make all the arrangements as to conveyance, price, &c.

Water.—Myli is an excellent watering place, the stream running all the year round, the only inconvenience being the shallowness of the shore. Plan, 1,308.
Var. 5° 10' W.

Winds.—During summer, the sea and land breezes are very regular; the sea breeze sets in from the S.S.E. about 11 h. a.m., and blows until between 8 h. and 10 h. p.m. It is then succeeded by the land wind from N.N.E., which continues until about 6 h. a.m., when it falls calm until the sea breeze again sets in. Vessels leaving the anchorage under sail, should get under weigh with the first of the land wind, so as to be sufficiently far out of the gulf when the sea breeze springs up in the forenoon.

Karathona bay.—From Nauplia the shore trends south-south-east nearly $2\frac{1}{2}$ miles to Cape Khondros. Karathona bay on the north side of the cape affords good anchorage in 11 fathoms, a quarter of a mile to the northward of Karathona island, which is 45 feet high and connected to the cape by a shallow bank.

St. Vincent shoal.—St. Vincent shoal, with $5\frac{3}{4}$ fathoms water on it, lies nearly 4 cables W.S.W. from the south-west extreme of Cape Khondros, and should be avoided in vessels of heavy draught. The south-west edge of Dhascalia islet bearing eastward of S.E. by E., and open of the nearer part of Tolon island, will lead south-westward of the shoal; there are 8 and 9 fathoms water close to it. Lat. 37° 1' N.
Long. 22° 49' E.

Port Tolon.—At $1\frac{1}{2}$ miles south-eastward from Cape Khondros, is the island of Tolon, a mile in length, bold and steep-to. Its north-west coast forms, with Cape Rui opposite, a narrow passage with 7 fathoms of water into Port Tolon; fronting the inner end or eastern pass to the port is the little islet Koro-nisi, with deep water around it. Tolon island shelters vessels from south-west winds, but Port Tolon is useless except for small vessels that can make fast to the shore, the bottom being loose gravel. In the bay east of Port Tolon, except near the shore, the water is everywhere too deep for ordinary anchorage. There is a colony of Cretans in the village of Rui at Port Tolon. Chart, 1,518.

Dhascalia.—On the south-western side of Tolon island, at the entrance of a rocky bay, is the little islet of Dhascalia with a building on it.

Tolon rock, with 2 fathoms water on it, and 14 to 36 fathoms around, lies S.E. $\frac{1}{2}$ E. a little over a mile from Dhascalia islet.

Cape Khondros, open westward of Tolon island, bearing N. 47° W., leads south-west of the rock; Mount Chakali, N. 36° W. open eastward of Tolon island, leads north-east of the rock; Mount Ortholithi, open southward of the triangular cliff on Platia island, bearing N. 86° E., leads south of Tolon rock. (See view on chart No. 1,518.)

Port Khaidari (or *Vivares*), 3 miles eastward of Port Tolon, is an inlet trending north-westerly nearly a mile, by about a third of a mile in breadth. It carries from 30 fathoms water at the entrance, to 5 fathoms at 2 cables from its head, where it leads into a shallow lagoon. The port is well sheltered, but surrounded by high land which causes baffling winds, and makes it difficult to enter or leave under sail; the largest vessel, however, may pass the shore within a quarter of a cable. The entrance is narrow and difficult to make out, but it may be known by the ruins of a fort on the west point of entrance, and a little chapel on the east point; there are no houses here.

Platia island, $1\frac{1}{2}$ miles in length north-west and south-east, is bold all round. It lies about $1\frac{1}{2}$ miles southward of Port Khaidari, Lat. 37° 30' N.
Long. 22° 55' E.

Chart, 1,518.
Var. 5° 10' W.

and on its western side is a conspicuous white triangular cliff, one of the marks for avoiding Tolon rock lying $1\frac{1}{2}$ miles westward of the island and just alluded to.

Hypsili island, a mile and a half in length east and west, and 786 feet high, is bold and cliffy on the south side, and steep to all round, the 100 fathoms line of soundings passing within about $1\frac{1}{2}$ cables of its southern side. It lies nearly $1\frac{1}{2}$ miles from Cape Ieri, with depths of from 32 to 80 fathoms between.

Cape Ieri is a projecting point 5 miles south-eastward of Port Khaidari, the low shore between forming a slight bay, with deep water, and clear of danger, excepting the shallow water bordering the shore at the distance of 2 cables on the western side of the cape, and for 2 miles to the northward.

Voúrlia bay is a deep indentation in the coast between Capes Ieri and Voúrlia. The depths are from 19 to 60 fathoms, and it is open to the south-west.

Charts, 1,518
and 1,525.

Port Kiladia.—Cape Thynni bears S.E. by S. $\frac{1}{4}$ S., $4\frac{3}{4}$ miles from Cape Ieri, and these two capes form the horns of a bight $4\frac{1}{4}$ miles deep, with an irregular shore indented by two or three bays. In the eastern part of the bight, is Port Kiladia, about three-quarters of a mile deep, and about a third of a mile wide. It is fronted by an islet, having a narrow passage on either side of it into the port, which is land-locked, and in the outer part from 3 to 5 fathoms deep, mud bottom, but with less than 3 fathoms abreast the Custom-house, whence it shoals rapidly to the head of the port.

On the south-western side of the port are a monastery, Custom-house, a few houses, and jetties, being the port of Kranidi, a town containing in 1896, 6,954 inhabitants, situated on a hill 627 feet high, $2\frac{1}{2}$ miles south-eastward.

Shoal.— $3\frac{1}{2}$ cables S. by W. $\frac{1}{2}$ W. from Cape Thynni, and nearly the same distance from the coast, is a shoal patch with 3 fathoms water on it, which should be avoided when in this vicinity.

Coast.—From Cape Thynni, the coast trends southerly $2\frac{1}{2}$ miles to Cape Koraka, when it turns eastward round Vevaronda bay to Port Kheli on the south-east; the shore between is irregular, with various small cliffy projections.

At about half a mile northward of Cape Koraka is the little islet of the same name, bordered by rocks to a distance of $1\frac{1}{2}$ cables; there is a narrow boat-passage between the islet and the shore. The eastern shore of Vevaronda bay is low and bordered by shallow water, which extends more than half a mile from the shore. The bay is frequented for salt, which is made in the lake supplied from salt springs between it and the head of Port Kheli.

Plans on 1,502,
2,836a.
Lat. 37° 19' N.
Long. 23° 9' E.

PORT KHELI (PORTO-KHELION).—The entrance to this port, 3 miles north-eastward from the western end of the island of Spezzia, is narrow, but widens within into a spacious basin; the anchorage, however, available for large vessels is limited to the inner part of the channel, where the depth is about 5 fathoms, mud; the depth all round the harbour being sufficient only for small vessels.

The channel into the port is about a mile in length, and the distance between the lighthouse point and Kaluiri rock, which may be considered the entrance points of the port, is 4 cables; this breadth diminishes to less than 2 cables about halfway in. On the south-

eastern side of the port are the ruins of the ancient town of *Mazes*, the greater part of which are covered by the water; some of the buildings could have been but 8 or 10 feet square. Plans on 1,502 and 2,836a. Var. 5° 10' W.

Kaluiri rock, beacon.—The three inner points on the south-eastern side of the entrance channel when in line, form a good clearing mark for the Kaluiri rock, which is marked by a beacon 13 feet high, and is situated off the south-east entrance point.

The modern village, Leonidion, and Custom house are on the western shore of the port. Fresh provisions may be procured at Kranidi, 3 miles inland.

A telegraph cable from a small cove between Alexandro and Laspo bays connects this port with the most northern point of Spezzia island.

Communication.—Steamers calling at Spezzia from Peiræus and Nauplia, occasionally stop at Port Kheli. The town of Kranidi just alluded to, is a telegraph station.

LIGHT.—On the north-west point of entrance to Port Kheli, a *fixed red* light is shown, at an elevation of 69 feet above the sea, from an iron pole, 20 feet high; it is visible in clear weather from a distance of 5 miles.

Coast.—Chenesar islet, on the south-eastern side of the entrance to Port Kheli, is bordered by shallow water, and half a cable from its south-western side is a rock with 3 feet water over it. From the islet, the coast trends south-east and eastward $3\frac{1}{4}$ miles to Cape Milianos; it is irregular with several little coves and rocky patches off some of the projecting points.

Shoal.—A detached rocky shoal with $3\frac{1}{2}$ fathoms of water on it, and 9 fathoms between it and the shore, lies 6 cables S.E. by S. $\frac{1}{2}$ S. from the south-west end of Chenesar islet, and 3 cables from the nearest shore. No marks can be given for this danger, though the discolouration of the water over it, may at times be seen. Chart, 1,525

Shallow ground.—From the point next west of Cape Milianos, shallow ground extends 3 cables to the southward; at half this distance there is only one fathom of water. The northern point of Trikeri island in line with the south extreme of Karteli islet, bearing about S. 83° E., leads well southward of this bank. In working through the strait of Spezzia, avoid too near an approach to either shore.

Temporary anchorage will be found in the mouth of the bay about $1\frac{1}{4}$ miles south-eastward of Chenesar islet; the bottom is sand and tolerably good holding ground.

CAPE MILIANOS, the south-eastern extreme of this part of the mainland, is a steep white point with a church on it. Rocks uncovered and covered extend 2 cables southward of the cape, and to avoid them do not open Ventza islet of Trikeri until Mount St. Elias is in line with Tigani island bearing N. 11° W., on account of the current, which depends on the force and direction from which the wind may have been blowing. Lat. 37° 17' N.
Long. 23° 12' E.

Milianos shoal.—This small rocky patch of 23 feet, and deep water around, lies $1\frac{1}{4}$ miles S. $\frac{3}{4}$ E. from Cape Milianos.

Alexandro islet lies well open north of Trikeri island, bearing S. 88° E., leads northward of the shoal; Mount St. Elias well open either east or west of the church on Cape Milianos, leads eastward or westward of the shoal; and Point Mezzo kept between Joannis and Mikro islets, bearing S. 37° W. leads eastward of Milianos shoal and westward of Trikeri shoal.

Chart, 1,525.
Var. 5° 10' W.

Trikeri shoal.—This is another rocky shoal, $1\frac{1}{4}$ miles S.E. by E. $\frac{1}{2}$ E. of Milianos shoal, with 3 fathoms on it, and deep water around.

Mount Eros, the highest peak of Hydra, halfway between Trikeri and Petasi islands bearing N. 78° E. leads northward of Trikeri shoal and southward of Milianos shoal; Mount Eros shut in southward of the northern end of Trikeri island N. 74° E., leads southward of Trikeri shoal. Drapi islet open of the southern end of Trikeri island, bearing East, also leads southward of the shoal.

These dangers should be passed with caution, as at times the current sets over them with considerable strength; and in working through Spezzia strait in a large vessel, avoid too near an approach to the mainland when in the vicinity of the $3\frac{1}{2}$ -fathoms shoal south-eastward of Chenesar islet, mentioned on page 35, and observe the same rule on the island side from the lighthouse until westward of the town.

Lat. 37° 15' N.
Long. 23° 8' E.

SPEZZIA (SPETSAL) ISLAND is 4 miles in length north-west and south-east, 2 miles in breadth, being somewhat in the shape of a pear. A ridge runs through the island, which attains its greatest elevation in Mount Elias near the centre, 815 feet high, with a church on it. Its coast line is irregular, and on the northern side, the shore of the town as far westward as the point, $1\frac{1}{2}$ miles westward of the lighthouse windmills, is bordered by a bank extending off $1\frac{1}{2}$ cables.

The western part of the coast is steep-to, but the salient points should be avoided.

Though rocky and generally barren, Spezzia has pasturage for goats, and many patches of soil which are carefully cultivated; it produces a little wine. It has one tolerable spring, which is near the middle of the island; the well water is said to be brackish. The climate is exceedingly healthy. The island in 1896 contained a population of 4,432.

For sketch of island, see page 39.

LIGHT.—From a cylindrical tower about 34 feet high, situated near the north-east point of Spezzia island, is exhibited, at an elevation of 99 feet above the sea, a *fixed white* light, visible in clear weather from a distance of 12 miles.

Spezzia.—The town is situated on the north-east side of the island and had in 1896 a population of 4,409, or nearly all the inhabitants of the island.

A small inlet at the east end of the town, about 3 cables deep, with depths of 2 to 3 fathoms, affords accommodation for coasting-vessels, which secure head and stern. On the west side going in, are some rocks with one fathom water on them. Large vessels anchor about three-quarters of a mile north-west of the lighthouse, and about a quarter of a mile from the shore, in 12 to 15 fathoms, mud, sand, and small coral, fair holding ground; or if necessary farther out.

Communication is maintained with Peiræus by steamer twice a week. Spezzia town is also a telegraph station.

Lat. 37° 17' N.
Long. 23° 5' E.

Bromboli, a high conical rock or islet, lying 7 cables north-westward of the western end of Spezzia, has from 3 to 7 fathoms around, and deep water outside it. At about $1\frac{1}{2}$ cables S.S.E. of Bromboli, is a rock just above the surface of the water. Between this rock and Spezzia, is a channel with depths of 12 fathoms, but which is narrowed

to about a quarter of a mile in breadth by a shoal with 4 feet water on it, lying $1\frac{1}{2}$ cables from the shore of Spezzia; between the shoal and Spezzia island, the depth is from 3 to 7 fathoms. Chart, 1,525.
Var. $5^{\circ} 10' W.$

Spezzia Pulo (Spetsópoulon), on the south-east side of Spezzia, is about one mile and a third in length, and is separated from Spezzia by a narrow passage known as Pulo strait, carrying depths of 6 to 7 fathoms water.

Rock.—A rock with about 6 feet water on it, lies on the north side of Pulo strait, and about $1\frac{1}{4}$ cables from the south-east coast of Spezzia island, narrowing the navigable breadth of the strait to 2 cables.

Mikro and Joannis islets form a group of three or four islets surrounded by rocks above and below water, lying one-third of a mile north-eastward of Point Mezzo, the south-eastern end of Spezzia Pulo with depths of from 4 to 8 fathoms between. In rounding Point Mezzo, the islets should be given a prudent berth. Lat. $37^{\circ} 13' N.$
Long. $23^{\circ} 11' E.$

Chart, No. 2,836a.

CHAPTER III.

EAST COAST OF GREECE FROM SPEZZIA ISLAND TO EURIPO STRAIT, INCLUDING DORO CHANNEL; WITH THE ADJACENT ISLANDS, INCLUDING ZEA.

Chart, 1,525.
Lat. 37° 16' N.
Long. 23° 15' E.
Var. 5° W.

Trikeri group (*Stratonisi*).—At 5 miles eastward of Spezzia, and 4 miles westward of Hydra, is the island of Trikeri, a mile in length north and south, having two hills, the southern one being 490 feet high; the island between the hills is nearly divided into two parts connected by a neck about a cable across.

Between Trikeri and the western end of Hydra are the following islets:—Drapi, Strongilo (conical), Karteli, Disaki, Ventza, and Alexandro; this latter islet, next in size to Trikeri, lies south of Cape Bisti the western end of Hydra, from which it is separated by a clear and deep channel half a mile wide.

Shallow patches.—The soundings between and around these islets are generally deep, but between Strongilo and Karteli, and nearly on the line joining the north-west sides of these islets, there are two shallow patches, one nearly half a mile from Strongilo, with only 4 fathoms of water on it; the other patch, about the same distance from Karteli, has 7 fathoms on it. There is also another patch with 5 fathoms on it, nearly 2 cables north-eastward of Karteli with a 12 feet patch between it and the island. Disaki and Ventza are nearly joined by a shoal with 2 fathoms of water over it, extending from the former islet, but there is a narrow passage with 6 fathoms water, close to the south-western end of Ventza.

Stavro (Stavrónisos) island, nearly $4\frac{1}{2}$ miles S.E. $\frac{1}{2}$ E. from the western extremity of Hydra, is high, steep, and about half a mile in diameter, with two rocks above water on its south-western side. Stavro can be seen even at night for a considerable distance.

Lat. 37° 14' N.
Long. 23° 26' E.

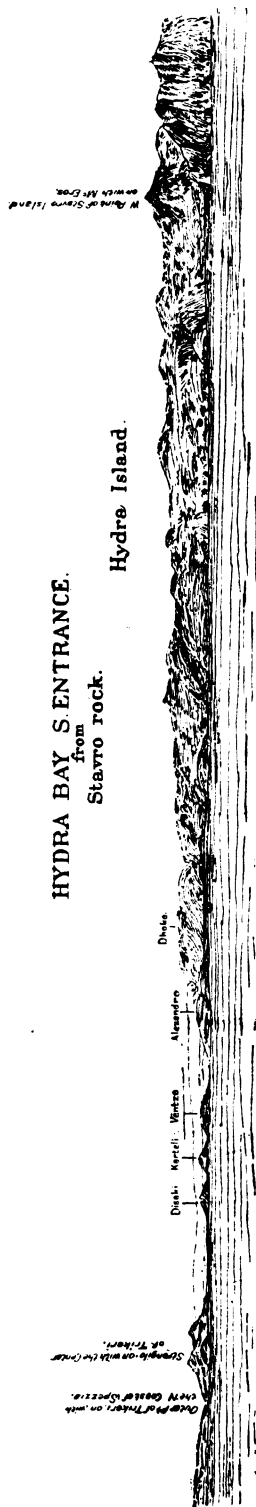
STAVRO ROCK.—This danger, with only 2 feet of water over it and with depths of 30 fathoms around, lies 7 cables S.W. by S. $\frac{3}{4}$ S. from the south-western end of Stavro. Mount Eros of Hydra well open to the westward of Stavro bearing N. 19° E. leads west of the rock.

Approaching the rock from the southward, be careful to keep all the island of Spezzia open of the southern end of Trikeri, bearing N. 74° W. until Mount Eros is well open westward of Stavro island; the northern peak of Trikeri in line with the conical islet of Strongilo, bearing N. 63° W. leads three-quarters of a mile southward of the rock, and Mount Eros open eastward of Stavro N. 9° E. leads eastward of the rock.

Dhoko (Dokos) island, separated from Hydra island by Petasi strait, is $3\frac{1}{4}$ miles in length east and west, and about $1\frac{1}{2}$ miles in breadth; it is very high and steep on the southern side, and at the western end 1,004 feet above the sea. Its coast line is irregular, and

HYDRA BAY S. ENTRANCE.
from
Stavro rock.

Hydra Island.



Island of Spezzia NW. by 4 or 5 Miles

Chart, 1,525.
Var. 5° W.

near the eastern end on the north side, is a bay nearly a mile deep, having from 7 to 18 fathoms water; a cove on the western side of the bay is used by the Hydriotes to lay up their worn-out vessels, and another cove on the eastern side is at times used for the same purpose. Dhoko has a few straggling cornfields, and had a population of only 49 in 1896.

Shoal.—At a cable northward of the eastern entrance point of the bay, is a rocky shoal about half a cable in extent, with 2 fathoms water on it, 4 to 7 fathoms around, and deep water near it to the northward. Kivotos islet off Port Molos (in Hydra), open of the north-eastern extreme of Dhoko, S. 56° E., leads outside the shoal. A 5-fathoms patch lies about the same distance eastward of the west entrance point.

Petasi strait between Dhoko and Hydra islands, is more than a mile wide, clear of danger, with deep water throughout. As Dhoko is high and bluff, it is necessary when working through this passage to watch the variable squalls, or eddy winds. At times, the current here runs to the eastward even with fresh north-easterly winds.

Dhoko (Dokos) strait.—The western end of Dhoko island is separated from the shore of Cape Muzaki of the main, by a clear and deep channel 4 cables wide; but it is inconvenient for sailing-vessels, as the wind here is almost always baffling, and calms are frequent, caused by the high land of Dhoko.

Cape Muzaki, bearing N.E. $\frac{3}{4}$ E., distant 5 miles from Cape Milianos (page 35), is the north-eastern entrance point to the deep bay formed between them.

HYDRA ISLAND (ancient *Hydra*), is 11 miles in length in a W. by S. and E. by N. direction, with an extreme breadth from Cape Rigas to the town of Hydra, of about $2\frac{1}{2}$ miles. It is almost entirely composed of bare sterile rocky land,* Mount Eros near the centre being 1,958 feet above the sea. The coast line is rugged and irregular, with deep water nearly everywhere around it, more especially at the eastern end, where the depth of 100 fathoms is found at 2 cables from the land. In 1896 the population of the island was 7,128.

Lat. 37° 21' N.
Long. 23° 28' E.

The principal town of the island bears the same name, and stands on a barren rugged height surrounding the port near the middle of the north shore; the houses are substantially built, many of them with large and airy apartments, with marble pavements, the public edifices including many churches and religious establishments, an exchange, a college, commercial, navigation, and elementary schools. The streets are uneven and precipitous, but remarkably clean. The manufactures are silk and cotton stuffs, soap, leather, &c. The population of the town in 1896 was 7,057, a large proportion of whom, unable to derive subsistence from the soil, devote themselves to trade, commerce, and navigation.

Communication.—There is connection with Peiræus and other ports twice a week by steamer. The town of Hydra is also a telegraph station.

LIGHT.—On Tabia point, the eastern entrance point of Port Hydra, is exhibited from an iron shed a *fixed red* light, elevated 40 feet above the sea, and visible in clear weather from a distance of 6 miles.

Chart, No. 2,836a.

* It has been said that its layer of soil was so thin as not to afford the Hydriotes sufficient earth to bury their dead.

The port of Hydra is about 2 cables deep, with 11 fathoms water in the middle; all vessels moor with the stern to the shore. There is no anchorage off the port. Chart, 1,525.
Var. 5° W.

Ports Molos and Mandraki.—The little port of Molos on the west, and that of Mandraki on the east, are much used by the Hydriotes to lay up worn-out vessels.

In Port Mandraki, a buoy is moored to assist vessels in warping in or out in contrary winds, though the port is reported to be nearly useless as an anchorage on account of the number of wrecks.

Islets.—To the westward of the town of Hydra are two small islets, Kamini and Vlikos; they lie about 2 cables from the shore, and Vlikos, the western one, is connected to the shore by a shoal with 4 fathoms water on it. Farther westward is Palamida, another little islet or rock; off Port Molos, are the Kivotos, and Erimo-nisi; further west, off Cape Bisti, the north-western end of Hydra, are Petasi and Pontiko-nisi. These islets lie from 2 to 6 cables from the shore; within them the water is deep, and the channels fit for coasters.

LIGHT.—At 93 yards within the extremity of Cape Zurva, the east point of Hydra island, is a square tower 36 feet high, built above the keeper's dwelling, which exhibits at an elevation of 118 feet above the sea, a *fixed white light*, varied by a *flash every two minutes*, in the following order:—Feeble *fixed light for ninety seconds*, eclipse about *ten seconds*, flash *ten seconds*, eclipse about *ten seconds*; it is visible from the bearing of N. 37° E. through north to S. 2° W., and should be seen in clear weather from a distance of 17 miles. Its limits of visibility have been reported unreliable. Lat. 37° 22' N.
Long. 23° 35' E.

The south coast of Hydra appears to be broken and rocky, and the water is everywhere too deep for anchorage. Between Capes Zurva and Rigas the 100-fathoms line is only from 2 to 8 cables from the shore; in this space there is one bay, but it appears to be useless. Westward of Cape Rigas the water is not so deep, but even here, the 30-fathom line is nowhere more than half a mile from the shore. On the whole of this coast there are no off-lying dangers excepting a small island called Nisizza, which lies three cables off shore at 2 miles to the westward of Cape Rigas.

KAPPARI ISLET AND SHOALS.—On the northern side of Cape Muzaki on the mainland (page 40), the shore forms a bay nearly a mile deep with from 6 to 20 fathoms of water, open to the eastward, and called Port Kuverta. Kappari islet, surrounded by shallow water, lies off the northern point of the bay, with a narrow channel 6 fathoms deep between. A patch of rocks above water, extends north-eastward nearly 2 cables from the islet, with 18 fathoms close to them. At about 2 cables N.E. $\frac{3}{4}$ E. from the outer rock, is a shoal with 3 fathoms water on it. Outside this 3-fathoms shoal, and E.N.E. distant $6\frac{1}{2}$ cables from the outer rock, is another rocky patch with 5 fathoms water, and 18 to 20 fathoms around; it is N. by E. nearly $1\frac{1}{2}$ miles from Cape Muzaki.

The north-eastern point of Trikeri island in line with the western extreme of Dhoko island, bearing South, leads a cable westward of the 5-fathoms patch, and between it and the 3-fathoms shoal. To lead eastward of the shoals, keep the west end of Dhoko island bearing westward of S. by W., on which bearing the whole of Trikeri will be shut in.

Port Kappari, to the northward of Port Kuverta, is a bay about $1\frac{1}{2}$ miles deep, partly formed by two tongues of land, with a low shore

Chart, 1,525.
Var. 5° W.

at its head; on the shore near the northern angle of the bay, is a convent. The bay is open to the eastward, but on the southern side there is anchorage in from 9 to 13 fathoms, mud bottom and good holding ground.

On the north side of the bay, is the town or village of **Kastri**; thence a low tongue of land, with the ruins of *Hermione* on it, projects eastward, forming the south side of Port **Kastri**, fit only for small vessels. North-eastward of Port **Kastri**, is another bay with good holding ground.

LIGHT.—A *red fixed* light elevated 68 feet above the sea is shown from a metal column on Cape **Kastri**; it should be visible in clear weather from a distance of 6 miles.

Mount Didyma.—Cape Thermisi, a projecting point, is $2\frac{1}{2}$ miles eastward of Port **Kastri**; this cape and Cape Muzaki, containing the four bays just alluded to, are the ends of spurs from the elevated mountain of Didyma which at about 6 miles from the coast is 3,541 feet above the sea. The high land, though of less elevation, continues eastward to Cape Skyli, 11 miles from Cape Thermisi, and its base all along is a low shore clear of danger.

HYDRA BAY, between the low shore of the mainland on the north, and Dhoko and Hydra islands on the south, is everywhere clear of danger except the shoals in the western part already named.

Anchorage.—The anchorage in this bay is off the northern shore, between Cape Thermisi and a low projecting shingle point nearly due East $4\frac{3}{4}$ miles from it. A little eastward of the point, is a large white building, formerly a convent, and also an olive grove, and 11 cables westward of the point, is a small chapel. The best berth is in 19 fathoms of water, about half a mile from the shore, with the chapel bearing about N. $\frac{1}{2}$ E., and the point East. This anchorage was known in the British squadron, during the Greek revolution, as Garden bay.

From Cape Thermisi, the shore nearly as far eastward as Supia island, $1\frac{1}{2}$ miles west of Cape Skyli, is bordered by a narrow bank from one to 2 cables wide, falling suddenly to deep water; at night, it should not be approached into a less depth than 30 fathoms, nor eastward of Supia closer than 40 fathoms. During winter, the north-easterly winds blow over the high land in violent squalls.

Lat. 37° 26' N.
Long. 23° 32' E.

CAPE SKYLI (SKYLLAION) is nearly 6 miles eastward of the low shingle point of Hydra bay anchorage, and 5 miles north-north-west of Cape Zurva, the eastern extremity of Hydra island. Cape Skyli is the termination of the high mountainous range which extends eastward from Mount Didyma, and the south-western entrance point of the Gulf of Athens.

Kelevini islands.—These two small islands at the foot of Cape Skyli, together are $1\frac{1}{2}$ miles in length. The western of the two, is connected to the southern part of the cape by a reef with 3 feet water on it, but the two islands are separated from each other by a narrow passage, with 8 fathoms water, called Kelevini pass. From the south-eastern side of the outer island, a reef extends nearly 2 cables to the southward with deep water close-to. These islands, with Cape Skyli, form the north entrance point to Hydra bay, and Cape Zurva (the eastern extreme of Hydra), the south point of entrance.

Winds and Currents.—In a sailing vessel, during strong north-easterly winds, the passage through Hydra bay is tedious, as the

high land causes heavy squalls in all directions, rendering it necessary to keep under easy sail. Sailing ships are therefore recommended to pass southward of Hydra. Chart, 1,525.
Var. 5° W

It often happens that the sea breeze, which draws through the bay from the eastward, fails just as it reaches Dhoko island, so that a vessel coming from the eastward will most likely be becalmed for some hours, and have to work through the night against the land wind. The water, however, in Petasi strait is deep on either shore. The current in this strait, at times, sets eastward with a fresh north-easterly breeze.

The currents between the islands and the main, as well as outside the islands, depend principally upon the force and direction of the winds. It often happens, however, that the land and sea breezes in the summer cause great variation in the currents; the land winds out of the Gulfs of Nauplia and Athens, necessarily cause eddy currents in the vicinity of Spezzia and Hydra, both in the channel within and outside the islands. To this may be ascribed, about half-way between the eastern end of Hydra and Stavro islet, a ripple occasioned by the meeting of the two currents, which generally appears at the intervals between the land and sea breezes, and which before now, here and elsewhere, has been taken for shoal water.

GULF OF ATHENS (SARONIKOS).—The entrance to the Gulf of Athens, called also the Gulf of Ægina, is between Cape Skyli, and Cape Colonna 27 miles east-north-eastward. The distance from Cape Skyli, or from a line between it and St. Georgio island to the Peiræus, is about 30 miles. Chart, 1,657

St. Georgio (ancient *Belbina*) or St. George d'Arbora, is a small island lying 17 miles eastward of the Kelevini islands, and $9\frac{3}{4}$ miles southward of Gaidaro islet westward of Cape Colonna. St. Georgio is about 3 miles in length in a north-west and south-easterly direction, narrow, and 1,080 feet high. The island is rocky, and but little cultivated, with a few inhabitants, who possess small flocks of sheep and goats. Lat. 37° 28' N.
Long. 23° 57' E.

LIGHT.—A *white flashing light, every ten seconds*, is shown at an elevation of 485 feet above the sea, from a tower, 21 feet high, surmounting a dwelling, 3 cables to the north-westward of the south-east point of St. Georgio; it should be visible in clear weather from a distance of 30 miles, but is obscured by the land from the bearing of S. 11° E. to S. 59° E. It has been reported to be irregular.

POROS ISLAND (ancient *Kalauria*), on the western side of the gulf of Athens, is rather more than 4 miles northward of the Kelevini islands. It is irregular in form, extending $4\frac{1}{2}$ miles east and west, with a spur or peninsula projecting from its northern side, and another from its southern side, the extremes of which are rather more than 4 miles from each other. The island is remarkable for its rocks of granite; the highest part, towards the eastern end, is 1,134 feet high, and a little westward, are the ruins of a temple of Juno. Plan, 1,517.
Chart, 1,525.

The peninsula (ancient *Sphæria*), on the southern side of the island, is connected to it by a low sandy isthmus, and only separated from the main coast by a passage a little more than a cable wide, in which mud, wrecks, and some rocks considerably contract the navigable channel. The town of Poros is on the south-west and western sides of the peninsula, and on the latter side is the government dockyard, with a patent slip, &c. This dockyard and slip are intended for building and repairing small wooden vessels, but both are closed at the present time.

Plan, 1,517.
Chart, 1,525.
Lat. $37^{\circ} 30' N.$
Long. $23^{\circ} 29' E.$
Var. $5^{\circ} W.$

The town is indifferent, but has a singular appearance, with its white houses perched among its dark volcanic rocks. The population of the town in 1896 amounted to 4,611.

Communication.—Steamers between Peiræus and Nauplia, call almost daily. The town is also a telegraph station.

Poros bay, on the south side of Poros island, is formed between the north-east face of the Sphæria peninsula and the south coast of the island, and was formerly known in the British squadron as Monastery bay, from the monastery standing 200 yards back from the north shore. This bay above half a mile square and open to the south-east, affords good summer anchorage in 15 to 19 fathoms, sand, with the monastery just in line with the point nearly half a mile westward of it bearing E. by N. $\frac{1}{4}$ N.; the peak of St. Georgio island in line or about $1\frac{1}{2}^{\circ}$ open of the north-eastern point of the bay; and Burgi islet about S. by E. $\frac{1}{2}$ E. The soundings thence decrease gradually to near the beach at the head of the bay.

The water is deep in approaching, and excepting the Mavrocordato shoal of 6 fathoms, which should be avoided in vessels of heavy draught, it is everywhere clear. Burgi islet on the south side of the bay, has a fort on it; and $1\frac{1}{2}$ cables west of it, is Lazaretto islet and another little islet on a rocky bank extending 2 cables from a sandy point, under the lee of which there is anchorage for small vessels, with good holding ground.

Mavrocordato shoal.—This rocky shoal, about half a cable in extent, with from 6 to 8 fathoms on it, and deep water all round, lies in the centre of the approach to Poros bay, $5\frac{3}{4}$ cables N. 82° E. from Burgi islet. The east point of inner Kelevini island well open of Cape Spadi the north point of Cape Skyli peninsula S. 25° E., leads eastward of the shoal. From the eastward, keep the summit with three peaks (which appear over the isthmus,) open northward of the house standing some way up the slope of Sphæria peninsula, until the monastery on the northern shore of the bay is open, when a vessel will be westward of the shoal. (See view on plan, No. 1,517.)

Channel to Poros harbour.—The channel into Poros harbour from Poros bay, is about 6 cables in length, and runs close along the southern shore of the Sphæria peninsula, the main shore being bordered by a shallow bank. This channel was reported in 1891 to have a depth of 14 feet, but as the depths vary, if it is intended to pass through in a small vessel, it would be well to sound it before entering. Commander Napier of H.M. ship *Torch*, 1874, writes:—"The eastern entrance to Poros harbour or that from Poros bay, is very tortuous, but a steam vessel of not more than 14 feet draught, may pass through in safety. Quick helm, great attention to the soundings, and hugging the northern shore so close that the yard arms almost touch the houses, is however required."

Small vessels bound to Poros harbour from the southward, find this channel convenient, especially when blowing fresh, saving the great distance round Poros island as well as being in smooth water. The shallow bank mentioned as extending from the mainland into the channel, is steep-to, and easily distinguished.

Water.—Excellent water may be obtained from the mainland three-quarters of a mile to the southward of Burgi, at the foot of a lemon grove, by applying to the authorities of the town, who, except in times of great drought, will order the water to be turned on.

Modhi islet.—This rocky islet, off the east end of Poros island, is half a mile in length, narrow, 334 feet high, and has some resemblance to a lion couchant. Some rocks lie off its north-eastern end, but the water all round is deep, and there are from 12 to 45 fathoms between the islet and the Poros shore, from which it is distant half a mile. The winds here are always baffling, caused by the high land of Poros, and the passage between is rarely used by sailing-vessels. Plan, 1,517.
Chart, 1,525.
Var. 5° W.

Loney rock with 7 fathoms water over it, lies East, distant nearly 2 miles from the north-east point of Modhi islet.

Platia islet, $1\frac{1}{2}$ miles N.E. $\frac{3}{4}$ E. from Point Akherdo, the north extreme of Poros island, is about $1\frac{1}{2}$ cables in length, and only 24 feet above the sea; it is surrounded by shallow water, and at nearly 2 cables W. by S. from the west end, is a rocky patch with only one fathom over it. The channel between this shallow patch and the north extreme of Poros, is clear, and from 45 to upwards of 120 fathoms deep. Plan, 1,517,
chart, 1,514.

The coast of Poros from Cape Kalauri, the eastern point of the island, trends north-westward 3 miles to Point Akherdo; it is irregular, forming a bight in which are several little bays and indentations, and steep-to, the 100 fathoms line of soundings passing both headlands at the distance of 4 cables. Between Point Akherdo, and Dana point the west extreme of the island and the eastern entrance point to Port Pogon, the distance is $3\frac{1}{4}$ miles; the coast between forms a large bight, and the water is everywhere deep.

PORT POGON on the south-western side of the island of Poros is of considerable extent, and one of the finest ports in the Archipelago for capacity, convenient depth of water and shelter, being completely land-locked. It is about 3 miles in length in a W.N.W. and E.S.E. direction, with an average working breadth of about half a mile. The above space may be considered to be divided into two portions, the outer and larger, being Port Pogon; the inner and eastern part, Poros harbour. The depth of water throughout is from 8 to 15 fathoms. Plan, 1,517.
Lat. $37^{\circ} 30'$ N.
Long. $23^{\circ} 26'$ E.

The head of Poros harbour is formed by the Sphæria peninsula, on which is the town of Poros, with a small government dockyard (at present closed). North of the dockyard, is a small inner harbour under 10 feet deep, but which is being dredged to a depth of 12 feet. The southern shore of the port, bordered by a narrow shallow bank, is reported to have changed considerably since the date of the survey. A low point on this shore 7 cables westward from the town, is conspicuous when entering the harbour, being covered with vegetation almost to the extreme edge.

The entrance channel opens northward at right angles to the port, and is from $2\frac{1}{2}$ to $3\frac{1}{2}$ cables wide between bold shores, 6 cables in length, and with depths of from 30 to 19 fathoms.

LIGHT.—At Dana point, the eastern entrance point of Port Pogon, is a square lighthouse 38 feet high, from which is exhibited at an elevation of 106 feet above the sea, a *red fixed* light, visible in clear weather from a distance of 9 miles. In the direction of Point Neda, the light is obscured when bearing northward of N. 32° E., and in the bight eastward of the lighthouse does not show when bearing northward of N. 89° W.

Directions.—A vessel from Athens bound to Port Pogon, should give Cape Turlu, the north-eastern extreme of Ægina, a wide berth to clear the dangers around it. When off Cape St. Marina of the same island, the Petro Kargo rocks will be seen; when abreast of Cape Andonis, which should also have a wide berth, steer for Petro Kargo

Plan, 1,517.
Var. 5° W.

rocks and pass them at a prudent distance on either side; then bring the westernmost of these rocks to bear about N.E. by N. and in line with Cape Andonis, which will lead up to the entrance of Port Pogon. Platia islet, which is low, will be seen on the port hand. From the southward, after passing Platia, bring the above marks on.

At night, the light on Point Dana will be seen, and a vessel may anchor where convenient either in Port Pogon, or Poros harbour.

Measured mile beacons.—On the north shore, close to the extremity of a projecting point $4\frac{1}{2}$ cables westward of the dockyard, are two obelisks close together, the one painted brown and the other white.

N. by W. $1\frac{1}{2}$ cables from Dhascalía island, is situated another obelisk painted white, distant one mile from the above pair. The course on the range is N. 51° W., and S. 51° E., the depth being from 8 to 15 fathoms.

Chart, 1,514.
Lat. $37^\circ 37'$ N.
Long. $23^\circ 29'$ E

Petro Kargo (Petrokaravon).—Two and a half miles north-north-west of Platia island, is a group of ten rocks above water, the largest being about 50 feet high, and extending over a space of about a third of a mile. These rocks, named Petro Kargo, are easily seen, steep-to, and without known dangers, below water.

METHANA PENINSULA is 5 miles in extent north and south, the northern part being of the same breadth east and west, whence it tapers to the south. Mount Khelona, an extinct volcano near the centre, rises to the height of 2,430 feet. On the peninsula are several villages, and on its south-western side the Acropolis and ruins of Methana. The shores are rocky, and here and there the rocks extend a little distance off, but the water is everywhere deep at the distance of half a mile. It is joined to the mainland on the south by a narrow rocky isthmus, formerly well fortified, the central part of which is 254 feet above the sea.

Port Steno, $2\frac{3}{4}$ miles north-westward of the entrance to Poros harbour, is a small indentation formed between the coast of the peninsula and the north-east side of the isthmus. The port runs in about half a mile to the north-west, and is available only for small vessels; the holding ground is indifferent, being chiefly loose fragments of volcanic remains.

Methana peninsula forms with the mainland coast on the west, a large bay running 5 miles south-eastward, with deep water all over it. The high mountainous land around, subjects the bay to heavy squalls when there is any wind. Mount Ortholithi, on the mainland, rises 3,638 feet above the sea, at about 2 miles from the western shore of the bay. There are one or two runs of fresh water on the western shore, but no anchorage.

Communication.—The steamer calling at Poros, occasionally stops off the village of Vromo on the south-east side of Methana peninsula.

The village of Methana on the south-west side is a telegraph station.

Plan on 1,816.

PORT EPIDAVRO.—At about $6\frac{1}{2}$ miles westward of Methana peninsula, is the port of Epidavro, the approach between Klephti and Kalamaki points, $4\frac{1}{2}$ cables apart, being open to the eastward. The space for anchoring near the head of the port is about 2 cables in extent, and 2 to $3\frac{1}{2}$ fathoms deep; ledges of rocks with 8 and 9 feet water on them, extend from both of the inner points of entrance, leaving between, a passage about 40 yards wide into the port, which is only fit for small vessels. The leading-mark through the passage, is Kalamaki point on the northern side of the approach to the port, in line with the saddle of Angistri island bearing N. 71° E. (See views on plan No. 1816 and chart No. 1514.)

The southern shore of the port is formed by a rocky peninsula, on which are the ruins of *Epidaurus*, but the little modern village of Epidavro is

on the north-western shore of the port, and in 1896 contained 541 inhabitants. The land in the vicinity is highly cultivated and productive, vegetables being raised here for the Athenian market. From Epidavro to Nauplia by carriage road is about 24 statute miles.

Plan on 1,816.
Lat. 37° 38' N.
Long. 23° 10' E.
Var. 5° W.

About 5 miles inland are the ruins of the precinct sacred to Asclepius, who is said to have been born here; a theatre is still in a wonderful state of preservation.

Epidavro acquired celebrity by giving its name to the constitution, adopted by a General Congress of Deputies from all parts of Greece, and promulgated on the 1st January 1822. The first Greek Assembly met at Piadha, 3 miles north-westward.

Communication with Peiræus is made by means of sailing-boat to Ægina, and thence by daily steamer to Peiræus.

St. Lassi bay.—The peninsula of Epidaurus forms also the northern shore of St. Lassi bay; the cliffs of the peninsula are steep-to, but a low shore trends at a right angle to the southward, and for two-thirds of a mile is bordered by a shallow bank, which from a point a third of a mile from the cliffs, extends off $1\frac{1}{2}$ cables, with 18 to 20 feet water on its edge, and depths of 10 and 15 fathoms immediately outside it.

Temporary anchorage.—In the event of having to communicate with Epidavro, there is temporary limited anchorage in fine weather during summer, in the north-western corner of St. Lassi bay. The water is deep, and the anchor should be dropped about $1\frac{1}{2}$ cables southward of the cliffs, and a quarter of a mile from the shore on the west; the soundings are from 13 to 20 fathoms, sandy bottom. Should an easterly wind set in, a vessel should leave the anchorage.

Coast.—At $4\frac{3}{4}$ miles northward of Port Epidavro is Cape Trakhyli, with an islet of the same name close to it; the coast between, falls a mile back to Piadha bay, the town or village of which name, with a population in 1896 of 1,089, and the old Venetian fortress, are on the hill nearly a mile inland. Chart, 1,514.

Port Sophiko.—Cape Trakhyli is the southern point of entrance to a deep bight, at the head of which, $3\frac{1}{2}$ miles north-westward of the cape, is the little port of Sophiko, used by small vessels. The bottom here is mostly loose gravel, and the port being under high land, the winds are always baffling, so that it is difficult for a square-rigged vessel to get in or out.

Submarine spring.—In the deep bight which leads to this little port, there is a spring of fresh water rising about a quarter of a mile from the shore from a depth of 7 fathoms, with deeper soundings around it; a light air is sufficient to mix the fresh and sea water.

Coast.—At a mile eastward of Port Sophiko is a small projection called Cape Traili; it is surrounded by rocks, some of which are above water, and steep-to. A mile eastward from Cape Traili and 4 cables from the shore, is Petro-nisi with a clear deep channel inside it; the coast hence, trends north and north-west as far as Port Franco, a distance of about 7 miles. Hevræo which lies about a mile to the north-eastward of Port Franco is bluff, about half a mile in length, and bears evidence of having once been fortified. Platia islet lies $2\frac{1}{2}$ miles westward of Hevræo, and 4 miles beyond it, is the beach of Kekhries bay. The shore all round this part of the coast is rugged with deep water, excepting Kekhries beach. Chart, 1,513.

Kekhries beach is steep-to, and in anchoring here, a berth should be taken close in, as the land wind in summer is so fresh that

Chart, 1,513.
Var. 5° W.

the anchor is liable to drag suddenly into deep water. At about $2\frac{1}{2}$ miles northward of Kekhries is Kalamaki bay (*see* page 50).

Chart, 1,514.
Lat. 37° 45' N.
Long. 23° 30' E.

ÆGINA ISLAND is somewhat triangular in form, its sides being about 7 miles in length, and its northern side running east and west. It is generally hilly, the hills for the most part being barren, though the valleys and plains, particularly in the western part, are fertile. Mount Oros, commonly called the peak of Ægina, near the southern end, rises 1,752 feet. Ægina enjoys a delightful climate, the atmosphere being pure, and fevers almost unknown. It produces corn, cotton, wine, olives, figs, almonds, &c., and in 1896 had a population of 8,231.

Ægina was anciently celebrated for the splendour of its buildings, but the only remains are those of some tombs, vestiges of wells, a column of a temple of Venus, some moles of its harbours, and the columns of a temple supposed at one time to have been that of Jupiter Panhellenius but now said to be that of Athena. The latter ruins stand on an elevation 578 feet above the sea, near the north-eastern part of the island, and its 22 remaining columns are conspicuous from seaward.

North coast.—Cape Plaka, the north-western extreme of Ægina, is beset with rocks which extend off upwards of a cable and are steep to; thence eastward, the north coast of the island is nearly straight, with an irregular shore, here and there skirted by rocks, but the water is all along deep at a distance of half a mile. Near Cape Turlo, the north-eastern extreme, is Nisida, a small islet surrounded and connected to the shore by rocks, as is also cape Turlo; both should be given a wide berth.

LIGHT.—On Cape Plaka (*Plakakia*) a *fixed white* light, elevated 36 feet above the sea, is exhibited from a round turret of yellow coloured stone 20 feet high; it is visible in clear weather from a distance of 8 miles.

West coast.—From Cape Plaka, the north-western extreme of Ægina, the coast southward is bordered by a bank, and from nearly 2 cables north-westward of the bluff of Cape Skendiriotti (known by the pillar of the temple of Venus), detached rocky patches, generally with 8 or 9 feet but in places less water on them, skirt the shore southward, passing the town of Ægina, and extending more than three-quarters of a mile from Palaio Pyrgos point, the northern point of Marathona bay.

Plan on 1,816.

Town and port of Ægina.—The town and capital of Ægina on the north-western side of the island, is irregularly built, but has some good houses, an orphan asylum, schools, museum, library, lazaretto, &c. In its vicinity, are the remains of ancient moles, and fragments of a temple of Venus. The population in 1896 was 4,851.

The little port of Ægina is formed by two moles, a modern and an ancient one, enclosing a small area about $1\frac{1}{2}$ cables by a cable in extent, with from 2 to 9 feet water, and open to the south-west. To the northward of this little port, and facing the lazaretto, are two other small detached moles, sheltering a cove within, which has 6 to 8 feet water.

Communication.—There is daily steamboat communication with Peiræus, to which also a telegraph cable is laid.

Lat. 37° 45' N.
Long. 23° 26' E.

LIGHT.—A *red fixed* light, visible in clear weather from a distance of 5 miles, is shown at an elevation of 28 feet from the end of the north mole at Ægina.

Chart, 1,514.

MARATHONA BAY.—This bay, southward of the port and town of Ægina, is sheltered from the west and north-west by Angistri and Metopi islands and shoals, and from the southward by Moni island.

In the northern part, there is spacious and excellent anchorage in from 10 to 19 fathoms water, mud or sand, and good holding ground. A fair berth for a heavy ship is in 19 fathoms, with Palaio Pyrgos point N.W. by N. $\frac{1}{2}$ N., Cape Skilomango (Angistri island), W. by S. $\frac{1}{8}$ S., and the north-western point of Moni island about S.W. $\frac{3}{4}$ S.; smaller vessels may anchor farther northward. The shore of Marathona bay is skirted by rocks and shallow water, which off Palaio Pyrgos point, extend more than three-quarters of a mile westward.

Chart, 1,514.
Var. 5° W.

Metopi channel. — Metopi island is surrounded by shallow ground which extends a mile eastward, leaving between it and the shoal water from Palaio Pyrgos point, a passage 4 cables wide and 5 to 6 fathoms deep. The north-eastern extreme of Hypsili islet bearing N. 34° W. and in line with the gap of Mount Geraneia, leads through the passage which is called Metopi channel; Perdika point bearing S. 34° E., and just open north-east of Moni island, also leads through the channel. (See views C and D on chart No. 1,514.)

Angistri island with, in 1896, a population of 713, is nearly 3 miles in length, the extreme breadth $1\frac{3}{4}$ miles, and its greatest elevation 709 feet. Its southern part is clear all round, but the northern part is surrounded by shallow ground connecting it to Metopi island on the north-east; Angistri pass, the narrow channel between, is 3 fathoms deep.

Thorussa island off its south-western point is rocky; the channel between with depths of from 7 to 19 fathoms is only $1\frac{1}{2}$ cables wide.

Vathi channel, between Angistri and Moni islands, is everywhere deep and clear; there is generally a light steady breeze in it, and it is the best channel to Marathona bay.

Moni island, a mile in length, is 571 feet high; between it and Perdika point, the south-west point of Ægina, is a narrow channel named Moni pass, with depths of 15 to 20 fathoms, but which should not be taken unless under steam, or with a strong sea breeze, as the winds are always baffling under Mount Oros, and the points of Ægina should be given a wide berth.

Lat. 37° 41' N.
Long. 23° 26' E.

Kyra islet, 9 cables in length, lies about $2\frac{1}{4}$ miles westward of Angistri, and two-thirds of a mile westward of Kyra islet is Salaphto nisi, both being steep to a cable from the shore; the passages between Angistri and Kyra, and between Kyra and Salaphto nisi, are clear and deep.

Methana channel. — The passage between Ægina with the above islands on the north, and the Methana peninsula with Petro Kargo rocks on the south, is called Methana channel; it is everywhere deep and clear, and the shores may be approached within a reasonable distance. (See view A on chart, No. 1,514.)

East coast. — **St. Marina bay.** — The east face of cape Turlo, the north-east point of Ægina, is clifty, and the shore for half a mile southward is bordered by rocks; one of these rocks at a distance has the appearance of a boat under sail. During fine weather, temporary anchorage will be found in St. Marina bay, in any convenient depth, sand and weeds. This is a convenient place for visiting the temple of Jupiter; donkeys may be obtained, if required.

Cape Andonis, about 3 miles south-westward from St. Marina bay, and Cape Pyrgos, the southern extreme of Ægina, should not be approached too near, as both capes are surrounded by shoal water; elsewhere, the east and south coasts are irregular and clifty with little bays.

Chart, 1,514.
Var. 5° W.

Lagosa (Eleúsa) isles.—The Lagosa isles form a group of five small islets lying close together, nearly $2\frac{1}{2}$ miles northward of Ægina; shoal water does not extend from them more than a cable, excepting at the eastern extremity of the eastern and largest islet, whence a bank with $3\frac{1}{2}$ fathoms on it makes off 3 cables in an easterly direction. These islets are the easternmost of a chain extending over a space of $11\frac{1}{2}$ miles in an east and west direction, separated from each other by deep channels, and generally steep-to.

Platia, Staktoroya, Hypsili islets.— $2\frac{3}{4}$ miles westward of the Lagosa group is Platia islet, from which a shoal extends a cable to the southward; Staktoroya and Hypsili, the two next islets westward of Platia, are steep-to. Hypsili is 424 feet high, and the highest of the whole chain, and has three small islets on its western side.

Lat. $37^{\circ} 49' N.$
Long. $23^{\circ} 16' W.$

Diaporii is the name given to the principal islets of the westernmost group of this chain: they are Agios Ioannis, Agios Thoma, and Trago nisi respectively 254, 137 and 253 feet high: these three islets are close together, and there is no ship-passage between them. Three little islets are scattered from about a quarter of a mile, to a mile eastward of them.

Shoals.—Between the eastern end of Agios Ioannis and Molathi (the eastern of the little islets of this western group), are two shoals; that, a quarter of a mile from Agios Ioannis has 3 feet water on it, and the other about the same distance from Molathi, $4\frac{1}{2}$ fathoms, with deep water around. There is nothing to invite a vessel near these dangers.

Plan on 2,021.

KALAMAKI BAY (ancient *Schenus*) in the north-west corner of the gulf of Athens, and on the eastern side of the Isthmus of Corinth, may be said to be contained between Cape Sophia on the west, and Susaki (Sparta) point on the east, these points being 2 miles apart. The bay affords accommodation for vessels of all sizes, in from about 6 to 19 fathoms, sand or mud bottom. It is open from about S. by E. to E.S.E., but not exposed to much sea, though subject to very heavy squalls from the high land around it, especially from the northward, and at times these blow so furiously as to part a vessel's chain. In approaching the bay, the Acro-Corinthus, a bold magnificent object, will be seen to the westward, rising 1,941 feet above the sea, on the south side of the low land that separates the Gulf of Athens from that of Corinth. Kalamaki village, with only 225 inhabitants in 1896, is on the north side of the bay.

Kalamaki bay is of especial importance owing to its connection with the Gulf of Corinth by the canal of this name.

LIGHT.—A *fixed red* light is exhibited from Susaki (Sparta) point at an elevation of 30 feet above the sea, and visible in clear weather from a distance of 8 miles. The lighthouse is a cylindrical masonry tower, 25 feet high, with keeper's dwelling adjoining.

Anchorage.—The usual anchorage is in 16 or 17 fathoms water, sandy bottom, with the village of Kalamaki bearing about N. by E. distant half a mile: Susaki point lighthouse, E. by S. $\frac{1}{2}$ S. nearly; peak of Ægina just open north of Hevræo islet S.E., $\frac{3}{4}$ E.; and the northern extreme of Acro-Corinthus W. $\frac{1}{2}$ S. Vessels may also anchor in 10 to 12 fathoms, a quarter of a mile north-north-westward of this, and small vessels may anchor in 6 fathoms, mud bottom, off the pier of the village of Kalamaki.

Lat. $37^{\circ} 55' N.$
Long. $23^{\circ} 1' E.$

Isthmia, a small but important town stands on the north-east side of the entrance to the canal from Kalamaki bay, and a ferry connects it with the opposite bank of the canal: it is the principal station of the

canal, and here are situated the Health office, Custom-house, Post office, and Telegraph office. Plan on 2,021.
Var. 5° W.

CORINTH CANAL.—This great engineering work follows almost exactly the line of the canal commenced, but never completed, by the emperor Nero 1,800 years ago. The present canal was commenced in 1882, and opened by the King of Greece on the 6th August 1893. Plan 1,367.

Dimensions.—Depths.—The canal is straight in a north-west and south-east direction, and is 3 statute miles 1,610 yards in length. The north-western portion of the canal for a distance of 1,280 yards, and the south-eastern part for a distance of 933 yards, were dredged, and are 98 feet wide at the water line, 72 feet at the bottom, with a depth of 25½ feet. The remainder is a cutting through the land (the summit of which was 250 feet above the level of the sea) and is faced with masonry; it is nearly 81 feet wide at the water line, 69 feet at the bottom, and has a depth of about 26 feet 3 inches. The railway from Athens to Corinth and Patras, crosses the canal by a bridge, the height of which from the water to the lower surface of the principal beams, is 147 feet 8 inches.

The canal is available for vessels whose draught does not exceed 23 feet 6 inches, and whose breadth is not more than 65½ feet.

Large vessels are recommended to take 2 tugs, and not to enter the canal from the westward during squalls which are frequently very heavy and the west entrance is very narrow.

H.M.S. *Tyne*, 3,560 tons passed through the canal in 1905 with one tug and no pilot.

The Orient s.s. *Lusitania*, length 380 feet, breadth 41 feet, and a tonnage of 3,877 tons, has passed through the canal.

Her Majesty's yacht *Osborne*, with an extreme beam of 64 feet 2 inches passed through on the night of 2nd May 1899, under her own steam, a tug also towing ahead.

None of the foreign steamship companies navigating the Mediterranean now use the canal; it is mostly used by small Greek passenger steamers.

Moles.—The entrance to the canal on the Corinth side is protected by two moles, forming the port of Poseidonia, the heads approaching one another, and leaving a passage 80 yards wide (see Mediterranean Pilot, Vol. III.).

The south-eastern entrance in Kalamaki bay, is protected by a single breakwater curving from the shore north-east of it. Lat. 37° 55' N.
Long. 23° 1' E.

LIGHTS.—The end of the north-east mole at Poseidonia is marked by a *fixed red*, and the end of the south-west mole by a *fixed green* light. The mole at Isthmia is marked by a *fixed green* light, and the opposite entrance point by a *fixed red* light. In addition to these, there are 56 *white* electric lights arranged in pairs on either side of the canal.*

Bollards are placed along the sides of the canal about 110 yards apart to assist vessels keeping in the middle of the canal.

Tides.—It is high water, full and change, approximately at 5h.; springs rise 10 inches, neaps are irregular.

Currents.—The movement of the water in the canal is dependent entirely on the wind, and its effect in holding up the water either in Corinth or Kalamaki bay. The general rate of the stream is 1½ knots, and seldom exceeds 2 knots. There is a range of 5 feet in the level of

* In 1897 many of these electric white lights were reported out of order, their places being taken by ordinary oil lamps.

Chart, 1,367.
Lat. 37° 55' N.
Long. 23° 1' E.
Var. 5° W.

the sea at Poseidonia, and 3 feet at Isthmia. Sometimes a set across the entrance at Poseidonia is experienced.

A signal can be made by pre-arrangement when the current is most favourable—that is, contrary—but the authorities do not consider there is any necessity to wait, though they recommend large vessels in any case to employ tugs.

Directions.—As may be gathered from the foregoing remarks, the best time to navigate the canal, especially with large vessels, is when the stream is adverse, as they will be more under command. Vessels cannot pass one another in the canal, as there are no sidings.

Provisional Regulations for navigating the canal.*

—Masters of vessels shall conform to the regulations, obey all signals mentioned therein, and comply with any requisitions made to them to execute the regulations. A copy of the regulations will be supplied to them on demand.

The transit through the Corinth canal is open to vessels of all nationalities, provided their draught of water does not exceed 23 feet 6 inches, and that they are of not more than 65½ feet beam.

Sailing vessels of 4 tons, or more, must be towed through. Steam-vessels may pass through the canal under their own steam, or be towed.

The canal authorities are not compelled to tow steam-vessels, but if there are tugs unengaged, it will be done.

The speed of vessels must not exceed 6 miles an hour.

Masters of vessels passing through the canal, must pay all dues for passage at the entrance, and when necessary, those for towage and pilotage. Payment is made on the net register tonnage (Suez canal certificate), and is collected at either end. They must also give the following information in writing:—

Description of the vessel. Name and nationality of the vessel.

Name of the master. Name and address of the owners.

Port of sailing. Port of destination. Draught of water.

Number of passengers, to be ascertained from the passage list.

Number of the crew. Tonnage and nature of the cargo.

Net tonnage to be ascertained by the vessel's official papers, and the rules of the International Tonnage Commission assembled at Constantinople in 1873.

The canal authorities determine the time of departure and the stoppages of each vessel. No vessel can enter the canal until the permission of the Captain of the Port has been received.

By day, a *blue* flag, and by night, a *white* light signify that the passage is clear. A *red* flag, or two *white* lights, that the passage is not clear.

All vessels preparatory to entering the canal, must have their yards braced up and boats swung inboard. In addition to two bow anchors, a kedge with a hawser bent to it, strong enough to hold the vessel, must be carried at the stern ready for letting go.

Vessels navigating the canal by night, must carry besides the regular lights, a *white* stern light. When towed, only the vessel being towed carries the light, and if more than one vessel is towed, only the last vessel carries the stern light. In the event of grounding, the canal authorities shall have the right to direct all operations for floating the vessel, and if necessary, to unload and tow her at the expense of the vessel. The cost of floating, towing, discharging, and re-loading must be paid before the departure of the ship.

Charts, Nos. 2,836a, 1,513.

* These regulations are liable to alteration, and a copy should therefore always be obtained from the local authorities.



Koluvr bay from the Mastiff rock.

The following acts are prohibited in the canal :—

Anchoring a vessel except under unavoidable circumstances.

Throwing overboard cinders, ashes, or material of any kind.

Firing guns on board vessels.

Chart, 1,367.
Var. 5° W.

All vessels must furnish their own warps and vessels being towed must use their own propelling power, or have it in readiness to assist the tug. Vessels can be towed by tugs not belonging to the Canal Society, but such tugs must pay the dues to which ordinary vessels passing through the canal are subject, except when going through the canal to meet vessels of their owner which they intend towing, or when returning to their usual berths after having towed a vessel through.

Communication.—Kalamaki village is connected with the railway and telegraph system of Greece. Plan on 2,021.

A telegraph cable from the Peiræus is landed near the village of Kalamaki, and another cable proceeds from the other side of the isthmus to Patras.

Megara bay.—From Kalamaki village, the coast eastward is bold, being the base of Mount Geraneia, which at $4\frac{1}{2}$ miles inland rises 4,494 feet high. Theodoro point, half a mile north-east of which is a little church of the same name, is $5\frac{1}{2}$ miles from Kalamaki; between this point and Salamis island, the coast falls back to the northward, forming an indentation which takes the name of Megara bay from the town of this name situated on a hill $1\frac{1}{2}$ miles from the shore, and $3\frac{1}{2}$ miles from the north-western extreme of Salamis island. This town in 1896, had a population of 6,442, and is connected by railway with Athens and Corinth. In the bay there are no outlying dangers, and the water is everywhere deep, but precaution is necessary when under sail, to guard against the heavy squalls during strong northerly winds.

Chart, 1,518.
Lat. $37^{\circ} 55'$ N.
Long. $23^{\circ} 9'$ E.

Telegraph.—The town of Megara is a telegraph station.

SALAMIS or KOLURI.—This singularly shaped island occupies an extent of $8\frac{1}{2}$ miles east and west, and 8 miles north and south, with an irregular coast line forming numerous bays, inlets, and projecting points. Its eastern and north-western extremes are separated from the mainland by narrow winding channels, enclosing on the north, the beautiful bay of Eleusis. The island is hilly, and near the centre is Mavro Vuni, 1,270 feet high. Its surface is rocky, with a thin but not unproductive soil; the vine thrives and the other principal product is honey. The population of the island in 1896, was 6,633.

LIGHT.—A *white flashing* light, showing a short flash about *every three seconds*, is shown at an elevation of 111 feet from a cylindrical masonry tower, 39 feet high, on Cape Konkhi, the south point of Salamis island; it should be visible in clear weather from a distance of 16 miles.

Koluri bay, on the western side of Salamis island, is $1\frac{3}{4}$ miles wide at the entrance between Cape Petrite on the south, and Rhevituza islet on the north, running in 5 miles to its head, where the anchorage space is much contracted by shallow water. The village of Koluri is on the north side, and near the head of the bay. A vessel may anchor southward of a little chapel, situated about three-quarters of a mile westward from the village, in about 8 fathoms water, or farther out as convenient.

Chart, 1,513.
Var. 5° W.

Mastiff bank.—This bank nearly in the middle of the entrance to Koluri bay, is about $6\frac{1}{2}$ cables in length north-west and south-east, and the general depths over it vary from 11 to 19 fathoms, but on its north-western part is a rocky patch with 4 fathoms only situated $\frac{1}{2}$ mile N. 6° E. from Cape Petrite. The mill or the chapel at the head of Koluri bay, kept well open of the north shore, leads south of the 4-fathom patch.

A patch of 5 fathoms lies nearly 4 cables from the east shore of the bay, bearing about N. by E., distant one mile from the little village of Mulké.

Supplies, water.—No water or supplies can be obtained in Koluri bay.

Lat. 38° 1' N.
Long. 23° 32' E.

ELEUSIS BAY.—This splendid bay, which appears almost like a lake, is about $8\frac{1}{2}$ miles in length east and west, with an average breadth of 2 miles, and derives its name from the ancient town on its northern shore. The depths throughout are from 7 to 18 fathoms, and the bottom is remarkably level. The shore is bordered generally by a narrow bank, and a quarter of a mile off the northern extreme of Salamis island, is a shoal with $1\frac{1}{2}$ to 3 fathoms water on it. There is no fresh water to be obtained, the springs which supply the mills at Rheiti on the east shore, being strongly impregnated with nitre. The approach to Eleusis bay, at the north-western end of Salamis, is fronted by islets, which with a long tongue of land from the main overlapping the projecting north-western extreme of Salamis, forms a narrow tortuous channel into the bay, through shallow water, the greatest depth over the mud being about 13 feet. This passage was blocked by Xerxes, the night before the battle of Salamis, with two hundred Persian ships, at the suggestion of Themistocles. The eastern approach to the bay is through Salamis strait and Georgio channel, with 4 fathoms of water.

Telegraph.—The town of Eleusis is a telegraph station, and is connected by railway with Athens.

Plan, 894.
Lat. 37° 56' N.
Long. 23° 36' E.

LIPSO ISLAND (ancient *Psyttalia*), is about nine-tenths of a mile in length, 155 feet high, with the lighthouse, and some white tombs resembling beacons on its north-eastern end. At $3\frac{1}{2}$ cables westward of the south-west extremity of Lipso, is Atalanta islet, and three-quarters of a mile beyond in the same direction, is Propetes rock, above water. Very shallow water surrounds the islet and rock to the distance of three-quarters of a cable, in addition to which, nearly the whole space between the islet and rock is occupied by a reef, with from $3\frac{1}{2}$ to 4 fathoms water, passable only by small vessels. The passage between Lipso and Atalanta islet, and also between Propetes rock and Salamis, is clear and deep, and may be used with a fair steady breeze or under steam, if convenient.

LIGHT.—On the north-eastern part of Lipso island is a circular grey stone tower 46 feet high, from which a *white fixed and flashing light*, every *two minutes* (fixed for *ninety seconds*, eclipse *ten seconds*, flash *ten seconds*, eclipse *ten seconds*), is exhibited at an elevation of 185 feet above the sea; it is visible in clear weather from a distance of 17 miles.

Batteries.—On Lipso island, batteries protected by earthworks, and mounting modern guns, have been erected on the north-east and south-west ends, also two in the centre of the island on commanding heights about 500 yards apart; other forts have also been erected on all the commanding positions of Salamis strait, and the entrance to the Peiræus.

SALAMIS STRAIT, between the eastern coast of Salamis island and the main, affords excellent anchorage for a large number of ships, over a space of about $1\frac{1}{2}$ miles east and west, by three-quarters of a mile north and south, in depths from 12 to 18 fathoms, sand and shells. Plan, 894.
Var. 5° W.

Salamis bay is protected on the south by a long tongue of land projecting eastward from Salamis island, and by Lipso island, and the islets, rocks, and reefs west of it, which add considerably to the shelter.

A conspicuous building, painted white with a red roof, and surrounded by a wall, is situated on the summit of the north-western point of Karrachin bay.

Shoals.—In the western part of Salamis strait, and $3\frac{3}{4}$ cables eastward of the north point of Ambelaki bay, is a shoal with 3 fathoms water over it, which should be avoided by large vessels anchoring in this part of the strait.

In the entrance to Karrachin bay, and 4 cables to the south-eastward of the conspicuous white building referred to above, is a small island surrounded by shallow water for a distance of about a cable.

The depths on the northern shore shoal gradually, but the southern shore is steep excepting at Sedukia point, from which shoal water extends for about 60 yards, with sand and rocky bottom.

Anchorage.—Vessels may anchor where convenient, but if any stay is to be made, it will be necessary to moor, as during strong northerly or north-westerly winds in winter, very heavy squalls blow from the high land, sweeping the surface of the water before them.

Supplies.—Caution.—No fresh water can be obtained from the adjacent shores at the anchorage in Salamis strait; all supplies must be obtained from the Peiræus, and as strong southerly winds frequently cause a heavy sea between the two places, a berth should be given by boats to the rocky point on the northern side of entrance to the Peiræus. Water will, however, be sent from Peiræus, in tanks.

Georgio channel.—The passage into Eleusis bay on the eastern side of Salamis island, is called Georgio channel, which eastward of Georgio nisi, is only $1\frac{1}{2}$ cables wide between the 3-fathoms lines on either side, and carries $3\frac{1}{4}$ to 4 fathoms water.

Buoys.—The Georgio channel is marked by four buoys; the south-eastern is a conical light-buoy, the south-western a mooring buoy, the north-eastern a conical buoy with topmark, and the north-western a spherical light-buoy.

Beacon.—A tower is built on a small rock near the north end of a one-fathom bank on the eastern side of the channel.

Shoal.—A 3-fathoms patch lies N.N.E., distant 2 cables from the north point of Georgio nisi.

Dockyard.—A government dockyard of considerable importance is situated on the eastern side of Salamis island, a quarter of a mile to the southward of Arabi point. Immediately south and detached, is a smaller yard containing a torpedo school, and launching slips for a flotilla of torpedo boats of various sizes. Lat. $37^{\circ} 58'$ N.
Long. $23^{\circ} 33'$ E.

Floating dock.—A floating dock, 308 feet in length, 61 feet internal width, and 21 feet depth on blocks, capable of lifting a vessel of 3,000 tons, is moored off the Arsenal. The largest vessel taken into the floating dock, was the S.S. *Sindh*, 3,121 tons, 372 feet long, 39.4 feet broad.

Plan, 894.
Var. 5° W.

Light.—From a lamp-post under the director's house on the north point of dockyard cove, is exhibited a *fixed white* light.

A basin entered from the south-west corner, has been excavated suitable for the loading and unloading of stores from barges and lighters, and it is proposed to make the basin available for ships.

Sheers.—There is no sheer hulk, but there are large sheers on a properly constructed pontoon, which is capable of being moved from one position to another, as required.

Piers.—A stone pier extends in a S. by E. direction nearly, for 390 feet from the director's house, alongside which a vessel of moderate draught can lie. A stone pier extends about 400 feet in an easterly direction from the point near the torpedo-school.

Quarantine.—This establishment is situated on Georgio nisi, which is connected by submarine cable with Salamis island.

Mooring buoys.—Five mooring buoys have been laid out for adjustment of compasses in the bay between Arpedoni and Karathes islands.

Ferry.—A sailing ferry-boat crosses from Salamis to the mainland, the starting place on the Salamis side being close south of the southern dockyard.

Plan, 1,520.
Lat. 37° 56' N.
Long. 23° 39' E.

The PEIRÆUS or PORT DRAKO* is a land-locked basin, with anchoring space, limited to about $4\frac{1}{2}$ cables north-east and south-west by a little more than $2\frac{1}{2}$ cables in a transverse direction, consequently it is necessary for vessels to moor, but it is advisable to have only about 35 fathoms of cable each way, and open hawse to the northward, the strongest winds being from that quarter. With the exception of a bank in the centre of the port on which there is only 21 feet water, the depths vary from 24 feet in the north-east part, to between 40 and 50 feet in the south-western portion. Dredging operations are in progress to deepen the water over this central bank, as well as over the flats which fringe the shores.

Large ships moor with their sterns secured to, and distant about 80 yards from the South quay wall, where at about every 10 yards are large iron rings, to which the quarter hawsers or cables are secured, the bower anchors being well apart to the northward. Heavy draught war vessels should, if possible, communicate beforehand by telegram or otherwise with the Captain of the Port, as to the proposed arrival of the ship, when he will, if possible, clear a berth. Merchant vessels generally moor with their sterns to the shore, and along both sides of the port are stone bollards, iron bars, or shackles for this purpose, but not strong enough for heavy vessels of war. The head gear should be ready to be run in at any moment. The port is generally full of shipping, amongst which are often several men-of-war of different nations, and it is necessary to avoid overlaying the cables. The centre of the harbour is kept clear.

Cape Themistocles, the most westerly projection of the promontory upon which the Peiræus stands, is $3\frac{1}{2}$ cables south-westward of Cape Miaulis, and between them the 5-fathoms line follows the shore round at a distance of three-quarters of a cable. A large orphan asylum, very conspicuous from seaward, is situated on the heights above Cape Themistocles.

Charts, Nos. 1,657, 1,513.

* The Peiræus or harbour of Athens is also called porto Leone, from the colossal marble lions which once crowned the two pillars forming the entrance, and which were about 72 yards apart.

Breakwaters.—A breakwater about 300 yards long extends in a southerly direction from Cara Krakari, and another about 400 yards in a north-westerly direction from Cape Themistocles. Both breakwaters have been damaged by the sea, so that gaps appear in them.

Saluting battery spit.—On a point half a mile above Cara Krakari, is situated the Saluting battery, and from its south-east extremity a spit extends S. by E. $\frac{1}{2}$ E. 70 yards; a conical buoy marks its extremity.

Shoal from South quay.—From the angle of South quay, 200 yards eastward from the south entrance point of the port, depths under 30 feet extend in the direction of the Saluting battery spit, 60 yards, leaving in the channel between the two, a depth not less than 30 feet, with a breadth of about 130 yards.

Alongside the south quay there is at places a depth of only 1 foot.

LIGHTS.—From the end of Cape Themistocles breakwater, two *green fixed* lights, placed vertically, are shown, the upper one being 40 feet above the sea.

From the end of Cara Krakari breakwater, two *red fixed* lights, placed vertically, are exhibited at an elevation of 36 feet.

The breakwater lights are unreliable.

A *red fixed* light is shown, from an iron support, 28 feet high, near the end of the Saluting battery spit.

A *green fixed* light is shown at an elevation of 26 feet from a square white tower, 15 feet high, on the west end of the South quay.

Harbour works.—Extensive harbour works, slips, and two dry docks are constructing on the north shore, between Cara Krakari and Saluting battery point.

The lengths of the docks are to be 462 and 328 feet, width 50 and 41 feet, depth 29 and 26 feet, respectively.

Pier.—A stone pier with a depth of 24 feet at its end has been constructed on the north shore to the north-eastward of the Saluting battery.

The inner port (ancient *Cantharus*) is generally crowded with small craft; it is being much improved and deepened by dredging.

DIRECTIONS.—In approaching the Peiræus, the high land of Mount Ortholithi, 3,638 feet high, Mount Khelona, 2,430 feet, on the Methana peninsula north-east of it, and farther on in the same direction, Mount Oros or the peak of Ægina, will all be seen to the westward. As the latter peak is brought to the south-west and southward, Mount Khelona will appear above it, which will again be overtopped by Mount Ortholithi; whilst to the north-east of the peak of Ægina will be seen the lofty summits of Hymettus. These elevated heights rise nearly N.E. by E. and S.W. by W. of each other.

Special directions for the Peiræus are almost unnecessary, the chart being a sufficient guide. From the southward, the peak of St. Georgio island, Mount Oros or peak of Ægina, and mount St. Elias (Cape Colonna), being near marks, will each be easily recognised. In running up the gulf, when abreast of Ægina, the land of the Peiræus will appear like an island with white and reddish cliffs, and a windmill situated on the hill with the flagstaff on it 195 feet high, immediately over the port. The Acropolis and buildings about Athens will be seen on the east, and the lighthouse on Lipso island on the west, which will indicate the entrance to the port.

As the Peiræus is generally crowded with shipping, it would be prudent in a heavy ship to send a boat in, to mark with buoys the

Plan, No. 1,520.
Lat. 37° 56' N.
Long. 23° 39' E.
Var. 5° W.

Plan, 1,520.
Lat. 37° 56' N.
Long. 23° 39' E.
Var. 5° W.

position for the anchors before entering, if arrangements have not already been made with the Captain of the Port to clear a berth (*see* page 56). The entrance between Cape Themistocles and Cara Krakari breakwaters is about $1\frac{1}{4}$ miles eastward of Lipso island lighthouse; thence to the narrows it runs in half a mile, and in large vessels under sail, unless with a fair wind, the port is difficult of access, the channel at the Saluting battery being narrow, and with a southerly wind, necessary to haul up southward of East.

At night, the *fixed* and *flashing* light on Lipso island on the west, and the lights on the ends of the breakwaters will denote the entrance.

Caution.—From the crowded state of the shipping in the Peiræus, it would be well to consider as to the advisability of vessels of war remaining for any length of time in the port, unless in cases of necessity, or during the winter months, as it receives the whole of the drainage from the town, which is increasing in size, and there is no tide and but a small outlet: in summer bad cases of fever occur.

Pilotage is not compulsory.

The town along the north-eastern side of the Peiræus, is well laid out, extending and rapidly rising in importance; the population in 1896 was 43,005, and of Athens, 128,735; but in 1906 they were estimated to have increased to 70,000 and 170,000 respectively.

The health of the town is not good, the water supply being defective, and small-pox and typhoid fever are prevalent.

Industries, Trade.—Several cotton, cloth, chair, soap and dyeing factories are in active operation, also distilleries and iron foundries. The principal articles imported are coal, grain, the finer kinds of cloth and cotton textiles, hardware, timber, dried fish and groceries, and were valued in 1905 at 3,119,149*l.*, of which 605,006*l.* came from the United Kingdom. The chief exports are raw hides and cognac.

Communication.—There is communication by rail with Athens and thence to Corinth, Patras, Nauplia, and Tripolitza on the west, to Lavrion on the east, and to Bralo on the north. The latter line is to be extended to Larissa.

The railway station is near the north-eastern corner of the inner port, whence frequent trains run to Athens and Phalerum.

There is telegraphic communication to all parts in connection with the Eastern Telegraph Company.

Regular established lines of steamers run frequently to all parts of the Mediterranean and Black sea (*see* page 3).

Consul.—A British Consul and Vice-Consul reside at Peiræus.

Telegraph cables are laid to the isthmus of Corinth, Syra and Ægina.

Repairs, &c.—Repairs to machinery and boilers of large ships can be effected by the Vulcan Engine Works (Messrs. McDowall and Barbour), or at the works of Mr. Const. G. Basiliades. The sheers at the Vulcan Engine Works are constructed to lift 30 tons.

Supplies.—No good water is obtainable. The town is well supplied with provisions.

Coal.—About 300,000 tons of coal are imported annually and about 45,000 tons of coal (principally Welsh) are kept in stock by the different firms; price in 1906, 24*s.* 6*d.* a ton; coaling is performed by lighters alongside; these lighters carry from 10 to 70 tons, and about 800 tons can be put on board in an ordinary day's work.

Shipping.—The number of vessels entered during the year 1906 amounted to 2,322, with an aggregate tonnage of 2,907,580 tons, of which 214 vessels of 344,110 tons were British.

Plan, 1,520.
Lat. 37° 56' N.
Long. 23° 39' E.
Var. 5° W.

Sailors' Home.—This excellent institution was established about fifteen years ago, and it is so much appreciated, that it has been visited by some 2,700 sailors, and others, in one year.

Winds.—The strongest winds during winter are from the northward, or between N.W. and N.E., frequently accompanied by heavy squalls, sleet, and snow. Should the wind be at S.W., and veer round to N.W. and North, with the barometer rising, a gale from the northward may be expected. In June and July, strong northerly winds occur in the gulf of Athens every week or ten days, and last for two or three days; gales from the north-eastward usually last three days. During the summer months, the S.W. winds are most prevalent, when the sea breeze blows nearly all day, and in the afternoon directly into the harbour. December and January are usually attended with heavy rain.

Meteorological Table.—For result of observations extending over a series of years at Athens, see Appendix, page 340.

Port Passalimani (ancient *Zea*) is situated on the eastern side of the Peiræus peninsula, and has depths of from 5 to 12 feet, but dredging is in progress. During the summer months, vessels may anchor off this port, in 14 fathoms water, sand and mud, with the south peak of Salamis, Mount Konkhi, open, bearing about W. by S.; entrance to the port N. by W. $\frac{1}{2}$ W.; and Stalida islet N.E. $\frac{3}{4}$ N., distant half a mile. A small vessel may anchor a little farther in; the bottom is sand, mud, and weed.

PHALERUM BAY.—In the western part of Phalerum bay, is the town of Phalerum, near which is Actæon hotel, a large building with a dome. The town is in communication by rail with the Pieræus and Athens, and a large number of persons resort here for the purpose of bathing, in the summer.

Landmarks.—In addition to the hotel above mentioned the following buildings are conspicuous:—A pink house on the 262 feet hill north-westward of Port Castela; two chimneys, each 213 feet high, belonging to the Hellenic Paper Factory, at the back of Phalerum; two houses with conspicuous turrets about 600 yards to the south-eastward of Cape Colias, and constituting the south extreme of Old Phalerum.

A shoal with 16 feet water on it, lies N.W. $\frac{1}{2}$ N. distant nearly a quarter of a mile from Cape Colias on the eastern side of the bay.

Bank.—A bank with 7 $\frac{1}{2}$ fathoms least water on it, lies S.W. $\frac{1}{2}$ S. $1\frac{1}{10}$ miles from the same cape.

Not more than 3 fathoms will be found a quarter of a mile from the head of Phalerum bay.

A fair berth in Phalerum bay is in 9 fathoms, with the rock at the entrance of Port Castela (ancient *Munychia*) about N.W. by W. $\frac{1}{2}$ W. distant a little over half a mile. Small vessels anchor farther northward, in 5 $\frac{1}{2}$ or 6 fathoms.

Summer anchorage.—Vessels of war anchoring in Phalerum bay in summer, will escape the heat and the unpleasant smells of the Peiræus.

Provisions are obtainable at reasonable prices.

Telegraph.—Phalerum is a telegraph station.

Chart, 1,513.
Var. 5° W.

Kosma point is situated $2\frac{1}{2}$ miles to the southward of Cape Colias.

A patch with 2 fathoms on it lies, S. $\frac{1}{2}$ W. two-thirds of a mile from Kosma point, and nearly half a mile off shore.

Vessels cruising along this shore should give it a wide berth, and pay attention to the lead.

Port Aliki.—This little bay is about $5\frac{1}{2}$ miles southward of Phalerum bay; the shore between is irregular, rocky, and bordered by shallow water, which under the depth of 3 fathoms extends in several places 3 cables from the shore. Port Aliki is small, with about two fathoms water, and fit only for small coasters during southerly winds. During fine weather in summer, there is temporary anchorage off the port, in any convenient depth, sandy bottom and fair holding ground.

Lat. 37° 50' N.
Long. 23° 44' E.

Aliki rocks, upon which the sea always breaks, lie nearly two-thirds of a mile south-westward of Aliki point, and nearly the same distance from Praso nisi. There are 10 fathoms water close outside, and 7 fathoms between them and the shore. The rocks are resorted to during summer, for sponges.

Praso nisi (ancient *Hydrusa*) lies half a mile off shore, to which it is connected by a $2\frac{1}{2}$ fathoms ridge. In the bay between Aliki point and Cape Kavura the bottom is very uneven and it is not recommended.

Chart, 1,657.

Vuliasmeni bay.—Kavura point is the termination of a narrow projection extending westward, with a round rock close to it; between the point of Cape Zervi (ancient *Zoster*)—the southern termination of mount Hymettus—is the peninsula of Lombarda, united to the coast by a sandy neck, and having a large rock above water off its southern end. Lombarda peninsula forms the western side of Vuliasmeni bay, which has a beach at its head, is open to the southward, and fit only for small vessels during summer.

MOUNT HYMETTUS.—The highest part of the Hymettus range, Trelo Vuni, is 3,360 feet above the sea, and $2\frac{1}{2}$ miles to the southward is Mavro Vuni, 2,560 feet high; thence the range declines in height to Cape Zervi, the southern termination, $9\frac{1}{4}$ miles from Trelo Vuni. A mountainous district trends to the south-east from the southern part of Hymettus to Mount Korphona (ancient *Laurium*), which terminates at Cape Colonna, and the western slopes of the heights bound the north-eastern side of the Gulf of Athens.

PHLEVA ISLAND (ancient *Phaura*), 244 feet high, is a mile in length north and south, with an irregular coast line, and an islet or rock at its southern end, and another close to its northern end. The passage between the latter and the rock off the extreme of Lombarda peninsula, three-quarters of a mile wide, is deep and clear.

LIGHT.—A *white occulting* light, showing an eclipse of *one second* duration *every four seconds*, is shown at an elevation of 266 feet from a square masonry tower 22 feet high, on the summit of Phleva island; it should be visible in clear weather from a distance of 12 miles.

Lat. 37° 49' N.
Long. 23° 49' E.

Vari bay, on the eastern side of Cape Zervi, is about three-quarters of a mile deep, with a beach at its head, and sheltered from the westward by the land of the cape, but completely exposed from the southward. A vessel might, however, anchor here for any temporary purpose under favourable circumstances during summer.

The bight between Cape Zervi and Arsida island (ancient *Eleusa*), Chart, 1,657.
Var. 5° W. 7¼ miles south-eastward, is encumbered with shoals, and rocks covered and uncovered, with a coast line broken by several rocky points; it is therefore advisable not to pass within the line joining the cape and island just mentioned. Mount Olymbos, 1,610 feet high, is about 1½ miles inland from the south-eastern part of the bight.

Port St. Nikolo with saltworks at its head, about a mile eastward of Arsida island, is fit for small vessels during summer, but being open to the southward and south-westward, is not safe in winter.

Gaidaro island (*Patroclos*), 1½ miles in length, east and west, by about three-quarters of a mile in breadth, and 820 feet high, is uninhabited; a few partridges and quail may be shot, and there is good seining in the sandy coves on its north-eastern coast. The island is separated from the mainland by a passage with a depth of 6 fathoms, and rather more than half a mile wide; its northern side is bordered by a bank, and nearly midway between the eastern part of the island and the main, is Medina rock with 3 feet water on it. The point of the mainland, at the eastern entrance of the passage, is foul. Mount St. Elias rises 1,195 feet above the sea, 2¼ miles northward of the point.

H.M.S. *Flamingo*, in October 1878, found good anchorage, muddy sand and weed, with the south-east extreme of Gaidaro island about S.S.E., and the north-west extreme of the island W. by S. ½ S.

CAPE COLONNA (SUNION).—At rather more than Plan on 1,526 3 miles eastward of Gaidaro island, is the promontory of Sunion, better known by the modern name of Cape Colonna, from the ruins of the temple of Minerva on its summit close over the sea.* The hills in the interior are in the silver mine district of Sunion, and at 6 miles inland Mount Korphona is 1,230 feet high.

Legrana bay, between Gaidaro island and Cape Colonna, may be easily known by its sandy beach. This is a good stopping place, and frequently resorted to when strong winds from the northward or north-east, combined with a southerly current, render the passage for sailing-vessels through Zea and Doro channels impracticable. The anchorage is in any convenient depth, sand and weed. Lat. 37° 40' N.
Long. 24° 0' E.

Port Colonna.—The little bay called Port Colonna, on the western side of the cape, affords accommodation for one or two small vessels during northerly winds; the depths are from 8 to 3 fathoms, and the bottom coarse sand and fair holding ground. During off-shore winds, hematite iron ore is loaded by steamers from an iron pier 125 feet long, erected on the east side of the port.

MANDRI CHANNEL.—Makronisi forms with the rugged and irregular coast which it fronts, Mandri channel, the narrowest part of which at Cave point, 3 miles from Cape Colonna, is about 1½ miles wide. The dangers to be avoided are Pasha rock, Makri reef, and Tripiti rock off the northern extreme of Makronisi; with these exceptions, the shore may be approached on either side within half a mile.

Pegathi point bears N.E. ½ E., and is distant 2½ miles from Cape Colonna, the coast between forming Panorimo and Pasha bays.

Chart, No. 2,836a.

* The temple, of which twelve Doric columns of white marble still remain, was part of a strong fortification, and the walls are still traceable in nearly all its circuit (which is more than half a mile long), except in parts where the steep cliffs needed no defence.

Plans on 1,526.
Var. 5° W.

Pasha rock.—This danger, with less than 6 feet water on it, is the outer of the rocks skirting the irregular coast north-east of Cape Colonna. It lies $1\frac{1}{2}$ miles from the cape, a little without the line joining it and Pegathi point, and about 2 cables from the rocks above water on the southern side of Pasha bay. After rounding Cape Colonna, the coast should not be hugged too closely; Pegathi point bearing northward of N.E. by N. will clear Pasha rock.

Cave point is about half a mile north-eastward of Pegathi point, and as before stated, is the nearest part of the mainland to Makronisi.

LIGHT.—On Cave point is an iron lighthouse, from which a *red* *fixed* light elevated 39 feet above the sea is exhibited, visible in clear weather from a distance of 8 miles.

ERGASTERIA (LAVRION) BAY, is situated $1\frac{1}{2}$ miles northward of Cave point. The town, which had in 1901 a population of 10,000, owes its prosperity to its being the principal port of shipment of ores brought down from the valuable silver, zinc, lead, galena, and iron mines in the Sunion district, and to facilitate which, a railway is carried as far as Kamaresa, with branch lines to various points.

Ergasteria bay is about 4 cables wide and long, open to the eastward, and has a depth of 8 to 3 fathoms water over muddy but indifferent holding ground. Shoal water is said to extend to a distance of fully one cable from the south shore, which vessels are recommended to keep $1\frac{1}{2}$ to 2 cables from.

On a hill at the south side of the port, is a large conspicuous factory chimney, an excellent mark in approaching the port either from the northward or southward. On opening the bay, the town with large storehouses will be seen, and on a hill above it, a small Greek church. The winds from the northward at times blow with great violence, and at all times of the year.

Furnaces and smelting houses are situated at the head of the bay, where two piers have been constructed, from which steam-vessels ship the ores; the depth alongside being from 17 to 20 feet.

Wreck.—The wreck of s.s. *Solano* lies sunk in the entrance to the bay $4\frac{1}{2}$ cables from the eastern extreme of the quay; a light is shown at night from each of her two masts above water.

Rock.—A rock with a depth of 23 feet over it, is reported to be situated a quarter of a mile S. 40° E. from Ergasteria point.

Pilots.—Pilotage is not compulsory but there are a few authorized pilots who are very useful in taking vessels alongside the piers.

Repairs.—There are two companies who can execute small repairs to machinery.

Trade.—The exports (minerals only) for the year 1906, amounted to 592,427*l.*, and the imports to 73,268*l.*

Shipping.—In 1906, 106 vessels entered the port, of which 45 were British.

Coal and Supplies.—The former can be obtained from the two mining companies, in quantities of 50 to 100 tons, with difficulty, and at heavy rates. Fresh provisions are obtainable at any time, but for bread in large quantities, 12 hours' notice is necessary.

Water.—A tank carrying from 15 to 20 tons of water supplies shipping, but it is reported to be rather brackish.

Communication.—Ergasteria or Lavrion (Laurium) is a telegraph station. Railway trains run twice daily to Athens. Steamers

Lat. 37° 42' N.
Long. 24° 4' E.



from Peiræus to Volo call daily. The Frassinet Company's steamers call here fortnightly on their passage from Genoa to Smyrna. A telegraph cable is landed here from Zea island. Plan on 1,526.
Var. 5° W

Consul.—A British Vice-Consul resides here.

PORT MANDRI, immediately north of Ergasteria bay, is separated from it by a small hilly peninsula. The so-called port is a bay about three-quarters of a mile wide between the entrance points, and more than half a mile deep, but a bank with less than 3 fathoms on it extends 2 cables from the western shore. The anchorage is in the central part, in about 10 fathoms, mud and weed, good holding ground. Both Mandri and Ergasteria bays are protected from the eastward by Makronisi. There is a small village half a mile from the head of the port, called Thoricus, a station on the railway from Lavrion to Athens. There are several factories on the shore of the bay.

Vrisaki point bears from Cave point N. by E. distant $3\frac{1}{4}$ miles and forms the north side of Vrisaki bay, where vessels occasionally anchor.

LIGHT.—A *flashing* light showing *white* and *green* sectors is exhibited at an elevation of 70 feet from a square masonry tower, 24 feet high, on Vrisaki point; it should be visible in clear weather from a distance of 14 miles in the *white* and 8 miles in the *green* sectors. For sectors of lights *see* Light List, Part V., and chart. Lat. $37^{\circ} 44'$ N.
Long. $24^{\circ} 5'$ E.

Cape Mavrovuni is $3\frac{1}{4}$ miles northward from Vrisaki point, and may be said to be the west entrance point of Mandri channel from the northward. Chart 1,657.

Jetty.—Between Vrisaki bay and Cape Mavrovuni, on the west side of Aulaki bay, at the foot of the mount of that name, is erected an iron jetty belonging to the Sunium mines, French company, for the shipment of manganese ore from their mines at Kamaresa. The height of jetty is 30 feet, length about 90 feet, and depth of water 25 feet, and off it there is good sandy bottom for anchoring.

Mooring appliances have been provided, but steamers loading there should be plentifully supplied with stout wire hawsers. The place is reported to be safe in good weather, but steam should be kept ready, in the event of strong winds from E.N.E. to S.E., to run to Port St. Nikolo in Zea, or to Port Mandri to the southward.

MAKRONISI (HELENE ISLAND) is a long narrow island 7 miles in length in a north-north-east and south-south-west direction, and from $1\frac{1}{4}$ miles to three-quarters of a mile in breadth, hilly and rugged throughout. Its coast line is irregular and cliffy, and its most elevated parts, which are at its northern end, and about one-third from its southern end, are 918 feet and 578 feet high respectively. Plan on 1,526

Shoal.—On the western side of Point Angarlestro, the bluff south point of the island, lying parallel with and $1\frac{1}{2}$ cables from the shore, is a rocky shoal about 2 cables in length, with 6 feet water on it.

Makri reef, $2\frac{1}{10}$ miles northward of Point Angarlestro, and half a mile from the western coast of the island, is nearly 2 cables in length north and south, with only 9 feet water on its southern and shoalest part. The whole of Megalo island open west of Makronisi bearing N. 32° E. (*see* sketch on plan), or at night the *white* sector of Vrisaki point light, leads westward of the reef.

A large rock close to the western coast, with sunken rocks about a cable outside it, lies nearly a mile south-westward from Cape Tripiti, the northern end of Makronisi.

Plan on 1,526.
Lat. 37° 45' N.
Long. 24° 8' E.
Var. 5° W.

Tripiti rock, awash, and on which, except in calm weather, the sea generally breaks, lies N.W. $\frac{1}{2}$ W. distant half a mile from Cape Tripiti, the north extreme of Makronisi. The town of Zea, open northward of Cape Tripiti, leads northward of the rock; and the summit of St. Georgio island, in line with Pegathi point, bearing S. 33° W., leads westward of it. At nearly 2 cables southward of Tripiti rock, is a shoal with 4 fathoms on it.

At night, keeping in the *white* sector of Vrisaki point light, leads north-west of Tripiti rock.

Cape Tripiti is shoal a cable off, and a large rock above water with sunken rocks outside it, lies in the small bight on the eastern side, about one-third of a mile from the cape. With the foregoing exception, there are no dangers about Makronisi, and the water is deep at the distance of a quarter of a mile.

Chart, 1,657.

Zea channel.—The passage between Zea and Makronisi, is nearly 8 miles wide, clear of danger, and deep.

ZEÄ (KEOS) ISLAND is 10 $\frac{1}{2}$ miles in length in a north-east and south-westerly direction, and its greatest breadth, nearer the north end, is 5 $\frac{3}{4}$ miles. The island is steep to all round, no dangers existing more than a quarter of a mile off shore. The town of Zea (ancient *Iulis*) stands on a small conical hill on a spur of Mount St. Anna, and is approached from Port St. Nikolo by a steep but excellent road winding along the sides of the hills. The population of the island in 1907 amounted to 3,817.

Amongst the few antiquities remaining in the island, is a rudely executed colossal lion in bas-relief 20 feet in length, cut on the face of a kind of slaty rock in a valley between the town of Zea and Mount St. Anna.

Productions.—The island produces cotton, silk, wine, and a considerable quantity of valonia; oaks crown the highest ridge and extend some distance down the valleys on the south. There are also some mines, but they are not at present being worked.

CAPE TAMELOS.—LIGHT.—A *white fixed and flashing* light, showing a flash *every two minutes*, thus:—Faint light, *ninety seconds*; eclipse, *ten and a half seconds*; bright flash, *nine seconds*; eclipse, *ten and a half seconds*; is shown at an elevation of 200 feet from a cylindrical lighthouse 25 feet high, situated on Cape Tameλος, the south-west extreme of Zea; it is visible in clear weather from a distance of 16 miles from the bearing of West through north to S. 18° E.

Port Kavia (Kavyas) is a little bay about 3 miles northward of Cape Tameλος, off which vessels may anchor, but in rather deep water, during north-easterly winds. Ekkliño point, northward of the port, should be given a berth of half a mile, as an isolated flat rock with 3 feet water on its western part, and on which the sea breaks, lies a quarter of a mile south-west of its southern projection.

A small inlet about a mile northward of Ekkliño point, named Port Pisa, affords shelter for small coasters with off-shore winds. On the hills over the southern side of the inlet, are some traces of ancient remains.

Port St. Nikolo (St. Nikolaos).—The only well-sheltered port in Zea island, is that of St. Nikolo on the north-western side of the island, about 6 $\frac{1}{2}$ cables in length, and 2 $\frac{1}{2}$ cables in breadth in the outer part, with from 12 to 19 fathoms water. The entrance is between bold headlands on either side, but that on the north, named Point St. Nikolo, is bordered by a shallow bank which extends off about 40 yards.

The best anchorage is in the northern part, in 14 or 15 fathoms, mud, taking care to avoid the telegraph cable from Lavrion which is landed at the cable-house on the north shore. Merchant vessels calling for coal anchor in the north bay, and haul their sterns in to the coaling jetty. With fresh north-westerly winds, a heavy swell sets into the southern part of the port, and therefore sailing-vessels on the north side can more readily put to sea when the wind moderates, and it never shifts suddenly from north to south.

Plan on 1,526.
Var. 5° 0' W.

The Custom-house is on the western side of the bay in the southern part of the port, where there is a sandy shore; the head of port St. Nikolo is also composed of a sandy beach, off which a shallow bank extends three-quarters of a cable. The port will be known from seaward by Mount St. Savos, a rather elevated hill, on the south side of entrance and above the Custom-house just mentioned; the tongue of land forming Point St. Nikolo being rather level, and lower, with the lighthouse near its extremity.

Port St. Nikolo is convenient for vessels bound through the Doro channel, when unable to make headway against strong north or north-easterly winds.

LIGHT.—A *red fixed* light is shown, at an elevation of 120 feet, from a square white building 25 feet high on point St. Nikolo; it is visible in clear weather from a distance of 10 miles from the bearing of N. 67° E., through east, to S. 43° W.; a faint light also shows over the port.

Lloyd's signal station.—A white signal station is situated on the heights about $1\frac{3}{4}$ cables to the north-eastward of the lighthouse.

Communication.—St. Nikolo is connected by telegraph cable with Ergasteria (Lavrion) bay, and two steamers call weekly connecting with Syra and Peiræus. The telegraph office is at the town of Zea, some two hours' journey from the port.

Coal.—A Greek firm has an extensive coal depôt on the north shore of Port St. Nikolo, having constructed an enclosure capable of storing 20,000 tons of coal. From 45,000 to 50,000 tons of Welsh coal are imported annually, and from 5,000 to 8,000 tons are usually in stock. There is a coal wharf 300 feet long, with a depth of 10 feet at its extremity. There are 12 lighters, and about 300 tons could be loaded in 24 hours.

Lat. 37° 39' N.
Long. 24° 20' E.

Port charges for vessels calling in to coal are 20s., and if required the firm will supply a pilot free of charge.

Shipping.—In 1907, 156 steamers entered the port, in addition to the weekly mail steamers, of which 66 were British.

Trade.—The exports consist of valonia, barley, cattle, wine, vegetables, honey, wax, hides, and almonds; the imports are coffee, cotton and woollen goods, flour, oil, sugar, &c. In 1907 the former were valued at 10,170*l.*, and the latter at 14,300*l.*

Water and provisions can be obtained.

Port Oryas, at the northern end of the island, is a narrow inlet about half a mile deep with a beach at its head, but exposed to north-easterly winds, and is therefore not used except in cases of necessity. At about three-quarters of a mile eastward of the entrance, is the little islet of Spano, $1\frac{3}{4}$ cables from the shore, with which it is connected by a rocky bank.

Chart, 1,657.

Chart, 1,657.
Var. 5° W.

East Coast of Zea.—The east coast of the island from Spano island to Capes Spathi and Tamelos appears to be clear of danger everywhere, a depth of 30 fathoms being nowhere more than 3 cables from the shore.

Port Polais.—On the south-east coast of Zea, 3 miles from Cape Tamelos, is Port Polais, a small exposed bay, with the swell always setting in on the beach. Here are the remains of an ancient and strongly built town; some inscriptions are still extant, and the impression of two colossal feet, cut in a large block of marble. It is supposed to be the ancient *Carthæa*.

Current.—There are no off-lying dangers round the whole coast of Zea, but in light northerly winds vessels should not approach its northern end too closely, as the current sets strong towards it.

Plan on 1,526.
Lat. 37° 53' N.
Long. 24° 3' E.

PORT RAPHTIS.—At 5 miles northward of Cape Mavrovuni (page 63), on the mainland, is Raphtis or Statue islet, less than 2 cables in diameter, and 298 feet high. On the islet, which lies in the entrance to this port, are the remains of a colossal statue of white marble in a sitting posture, which being much mutilated and disfigured, has been at a distance likened to a tailor sitting cross-legged, and hence the name of both islet and port.

Port Raphtis (ancient *Prasice*) is rather over a mile wide at the entrance, and about $1\frac{1}{2}$ miles deep; north-westward, 3 cables from Raphtis islet is a smaller one called Raphtis Pulo, and westward 8 cables from the former is another islet called Praso. These islets, together with a projecting point at the head of the port, and shallow water around its irregular shore, considerably contract its area. There is, however, a large available space for anchoring, though exposed from the eastward; the water in places is rather deep, and the holding ground is not so good as at Port Mandri. The best anchorage is on either the northern or southern side of the port. The port is easily known by a remarkable bluff on the southern side of entrance, the bold land of Mount Perati, 1,030 feet high on the northern side, and by Raphtis islet which may be passed on either side.

Water may be obtained here, cattle easily procured, and firewood may be had in abundance.

Communication.—The nearest railway station on the line from Lavrion to Athens, is Markopoli, distant about 4 miles.

Chart, 1,597.

Marathon bay.—At about 6 miles northward of Port Raphtis, is the low projecting point of Velani, surrounded by a shoal extending off half a mile, with two little islets on it; on the southern side of the point, the shore is low and sandy. At $7\frac{3}{4}$ miles N. by E. $\frac{1}{2}$ E. of Velani point, is Cape Marathon, the termination of a narrow rocky tongue of land projecting $1\frac{1}{2}$ miles southward, and forming the north-eastern point of Marathon bay. From the cape to the point forming the south-western extreme of the bay, the distance is 4 miles, and from the line joining the two, the bay is about 2 miles deep, semicircular, and open to the south and south-east. Temporary anchorage in summer may be taken where convenient, the depths on the western side being 7 to 10 fathoms. Cape Marathon should not be rounded too closely, and the south-western point of the bay is foul and rocky.

The shore of the bay is a beach, and at the back of it on the north-west, is the plain of Marathon, celebrated for the memorable battle in which Miltiades defeated the Persians, 490 B.C. The mountain torrents which run into the plain during the rainy season, form behind the north

shore a deep marsh; the waste water which reaches the sea is unfit for use. On the south-western side of the plain, Mount Mendeli or Penticlicus reaches 3,640 feet above the sea, and from quarries here, was obtained the white marble with which the Athenian temples were built. (For continuation of this coast, see page 71.)

Chart, 1,597.
Lat. 38° 6' N.
Long. 24° 3' E.
Var. 5° W.

The ISLAND of EUBŒA (pronounced Evvia), commonly called Euripo or Negropont, is upwards of 100 miles in length in a north-westerly and south-easterly direction, with an irregular breadth, varying from less than 4 to about 18 miles. It is generally mountainous, the highest elevation being Mount Delphi (ancient *Dirphi*), which, situated in lat. 38° 37' N., long. 23° 51' E., rises 5,730 feet above the sea, its summit being scarcely ever free from snow. Mount Pyxaria, north-westward of Mount Delphi, is 4,400 feet high, Mount Okhi at the southern end of the island is 4,840 feet high, and on the western coast, Mounts Kurumbia and Kandili of the Kandili mountains are respectively 3,994 feet and 3,072 feet high; farther to the north-west, the elevations are from 1,000 to 3,060 feet above the sea. The general formation of these mountains is grey limestone and clay-slate.

Charts, 426, 1,556

The plains south-eastward, are generally cultivated with corn and olives, but the plains of Oreos north-westward, are more particularly appropriated to the vine, from which a light red wine is made, the common beverage of the Greeks, and a staple article of trade. The principal towns are Euripo, situated in the narrowest part of the strait of that name, Xero Khorì near the north-west extreme, Kumi near the cape of that name on the north-east coast, and Kárystos at the head of the bay of the same name at the southern end of the island. The villages are few, and generally on elevations at some distance from the beach. The population of the island in 1896 was 103,265.

Eubœa island is separated from the main by a very narrow strait anciently called the *Euripus*, and spanned by a bridge (see page 74). To the northward of the bridge, the space is called Talanta channel, and that to the southward Euripo channel; but the wider space between the south end of Eubœa and the mainland is named the Gulf of Petali.

Kárystos bay, at the south end of Eubœa, is $3\frac{1}{4}$ miles wide at the entrance, deep and clear of danger except on the western shore, where it is rocky and foul; it is exposed to all southerly winds. Vessels unable to proceed through the Doro channel against strong north-easterly winds, cannot do better than anchor in this bay; but in entering under sail, be prepared for the heavy variable squalls which blow from the high land; in anchoring, veer a good scope of cable, and have a second anchor ready to let go, as the holding ground, sand, or sand and shell, is indifferent.

Charts, 1,597,
1,820.

A good berth is in 16 fathoms, with Paximadion islet (44 feet high) just open of the inner western point of the bay, and for small vessels a little further in. A sailing-vessel should not, however, go too far in, as the winds may be light and baffling when leaving, and there is frequently an indraught into the bay. The old village $1\frac{1}{2}$ miles inland, is in a ruined state and half deserted, but a new village has sprung up near the shore at the head of the bay, where there is a mole enclosing a good inner harbour, capable of sheltering small vessels of 10 to 12 feet draught.

The population in 1896 was 1,498.

At some distance up the hills eastward of the ruins of the castle, are some ancient quarries, in which a few years ago there remained several columns; some nearly finished, and others still adhering to the marble rock by a small part only. These columns were of extraordinary

Charts, 1,597,
1,820.
Lat. 37° 58' N.
Long. 24° 26' E.
Var. 4° 50' W.

dimensions, one measuring 65 feet in length by $4\frac{1}{2}$ feet in diameter. The side of the hill downwards is strewn with fragments in all directions, and there appears to have been an inclined plane or road by which they were transported to the sea; their magnitude must have rendered this operation a most difficult one. The view from these quarries is magnificent, and amply repays the labour of ascending to them.

Supplies.—Fresh meat and provisions may be obtained at the town of Kárystos, and game abounds during the season, especially woodcock. Water is scarce.

Communication is maintained once a week by steamer with Ergasteria bay. The town of Kárystos is also a telegraph station.

Winds.—At the commencement of a gale from the northward, the wind under the land at Kárystos is light and variable, but as it gains strength, it blows down from the hills in heavy variable squalls, and at times for a few minutes appears to make the anchorage a lee shore, but there need be no apprehension, as the wind does not suddenly veer from north to south, but gives sufficient warning. (For east coast of Eubœa, see page 76.)

Plan, 1,788.

PETALI ISLANDS.—These islands and islets lie off the south-western coast of Eubœa, north-westward of Kárystos bay; the group consists of two islands (Megalo and Xero) on the south, and six islets on the north, the whole occupying a space of about $4\frac{3}{4}$ miles north and south, and $2\frac{1}{2}$ miles east and west.

Lat. 37° 59' N.
Long. 24° 16' E.

Megalo island, the south-western of the group, is more than $2\frac{1}{2}$ miles in diameter, and 1,285 feet high. Xero, $1\frac{3}{4}$ miles in length north and south, and 610 feet high, lies only $1\frac{1}{2}$ cables north-eastward of Megalo, to which it is connected by a ridge with 6 feet of water on it, apparently the remains of a mole.

Trago islet lies to the north-west, and in the middle of the entrance to the bight between Xero and Megalo; from it, a shoal, with less than 3 fathoms, extends $1\frac{1}{2}$ cables to the southward. Midway between Trago islet and Megalo there is snug anchorage for small vessels in 7 fathoms, sandy bottom.

Phundo and Praso islets north-west of Trago, are 2 cables from each other, and between them and Trago there is anchorage in from 9 to 12 fathoms, sand and gravel.

Lamberusa, $4\frac{1}{2}$ cables north-west of the north end of Xero, is the largest of the six islets; a shoal extends nearly a cable south-eastward from its south point, between which shoal and Xero the passage is deep and clear.

Shoals.—The two little islets of Makro and Avgo are the north-western of the group, and N.W. $\frac{1}{2}$ W. distant $3\frac{3}{4}$ cables from the north-west extremity of Makro islet, is a shoal with a depth of $3\frac{1}{2}$ fathoms on it. N.W. $1\frac{1}{2}$ cables from the centre of Avgo islet, is another patch with 3 fathoms water on it; the water is deep outside them. From the clearness of the water around these islands, the dangers will probably be seen, but their vicinity should be given a wide berth.

Supplies.—No fresh water is to be obtained at the Petali islands, and what is necessary for the few inhabitants has to be brought from Marmari bay, to the north-eastward. A few olives, grapes, and a small quantity of corn is grown. Rabbits, quails, and partridges are

found. The islands are resorted to by sponge divers and fishermen, and occasionally coasters anchor for shelter. Plan, 1,788.
Var. 4' 50' W.

The currents run strongly between the islands, and are much influenced by the prevailing winds.

Directions.—In running for shelter under the lee of the Petali islands from southerly gales which prevail in the winter months, there is no danger in coasting the western side of Megalo island, and when the peak of Trago islet is open of the northern point of Megalo, a vessel may haul in for the anchorage between Phundo and Praso on the one side, and Megalo and Tragoon the other, anchoring in mid-channel, in 9 to 12 fathoms between the western extreme of Trago and Praso islet.

Vessels wanting to refit may enter the inner anchorage, between Trago and Megalo, and anchor in 7 fathoms, sand, good holding ground, with a smooth sea in all winds. For sailing-vessels bound to the southward, the outer anchorage is preferred, as the wind shifts suddenly from south to north, and it can be left with facility.

Sailing-vessels bound through the Doro channel, and having to bear up from strong north-easterly gales, will not generally be able to reach these anchorages, for the gales come on suddenly and blow with such violence from the mountains northward of Kárystos, that it is almost impossible to carry sufficient sail to beat up.

XERO PASS.—Xero island is separated from the coast of Eubœa, by a passage called Xero pass, with a depth of 6 fathoms, and $1\frac{1}{2}$ cables wide between the 5-fathoms lines. At the northern part of the pass, shallow water extends from the coast of Eubœa nearly half-way across, but by keeping on the Xero side, 6 fathoms water can be carried through.

Four-foot rock.—North-westward from Paximadion islet, the western entrance point of Kárystos bay, is a point called Cape Roxo, N.W. by W. $\frac{1}{2}$ W., $8\frac{1}{4}$ cables distant from which, is a rock having only 4 feet water on its south-eastern part, and called Four-foot rock. The shoal under the depth of 3 fathoms is three-quarters of a cable long south-east and north-west.

Phundo peak, in line N. 42° W. with the north-east extreme of Megalo island, leads south-west of the shoal.

Shoal.—At 7 cables, about W. $\frac{3}{4}$ S. from Four-foot rock, is another shoal with $2\frac{1}{2}$ fathoms on it, lying in line being Cape Roxo and Avlabo point of Megalo, distant from the former $1\frac{1}{2}$ miles. Marmari point, the northern entrance point of Marmari bay, in line with the eastern extreme of Xero island N. $\frac{3}{4}$ W., leads close westward of the shoal; the point should therefore be shut in with the eastern extreme of Xero. Marmari point N. by W. $\frac{1}{4}$ W. just touching the extreme of Eubœa, or slightly open, leads between the above dangers.

Cape Roxo is difficult to distinguish, not being in sufficient relief from the high land at the back; at a cable south-westward of it, is a shoal with 5 feet water on it. Vessels with a southerly wind intending to run through Xero pass, will avoid the above dangers by keeping about a mile from Megalo, and by borrowing on the Xero shore in the pass, may enter Marmari bay without difficulty, where there is anchorage off the houses in from 17 to 12 fathoms, mud, but it is seldom resorted to.

Lat. $37^{\circ} 59' N.$
Long. $24^{\circ} 21' E.$

Akio islet and Dipsa rock.—At $5\frac{1}{2}$ miles north-westward of Megalo island, and 2 miles westward of the southern extreme of the point surmounted by Mount Viglia (south-east of which is Elapha Chart, 1,597.

Chart, 1,597.
Var. 4° 50' W.

Lat. 38° 10' N.
Long. 24° 10' E.

islet) is the small low islet of Akio; and $2\frac{1}{4}$ miles farther north-westward is another but smaller islet or rock named Dipsa, which lies $2\frac{3}{4}$ miles E. by S. $\frac{1}{4}$ S. nearly from Cape Marathon. There are no dangers in the neighbourhood of these islets.

Stura island.—This island at the northern end of the Gulf of Petali, is triangular in shape, with its northern side $1\frac{1}{4}$ miles in length east and west, thence tapering southwards upwards of $1\frac{1}{2}$ miles. Its coast line is irregular, and bordered here and there by shallow patches, and having several small islets and rocks in its vicinity, the shoals around which are steep-to. The group forms with the coast of Eubœa, the sheltered bay of Stura, but the water in it is too deep for anchoring.

Telegraph.—The village of Stura, situated about $1\frac{1}{2}$ miles from the shore of Stura bay, is a telegraph station.

Shoal.—Between Phonias, the north-western islet of the Stura group, and a point projecting from the coast of Eubœa on the north, is a 2-fathoms shoal. Cape Strongylo, southward of Stura island, open of Petusi islet at the southern end of Stura, S. 28° E., leads westward of the shoal.

Berdugi islets.—Cape Hagia Marina, on the main shore, $4\frac{1}{2}$ miles northward of Cape Marathon (page 66), is a bluff 713 feet high. South-eastward of it and separated from it by a passage three-quarters of a mile wide, are the four small islets of Berdugi, and the least depth between them and the cape is 6 fathoms.

To the eastward of the Berdugi islets, are the Stura group and shoals previously described, the passage between these two groups being deep and clear; the 2-fathoms shoal, north-westward of the latter group and the nearest hidden danger to the Berdugi islets, bearing from the lighthouse, N.E. by E., and distant $1\frac{3}{4}$ miles.

Vessels may pass on either side of Berdugi islets, by giving them and the points of the coast a reasonable berth.

Current.—The currents at times are strong.

LIGHT.—On the largest and highest of the Berdugi islets, at an elevation of 234 feet above the sea, a *fixed red* light is exhibited, visible in clear weather from a distance of 16 miles.

Cavaliani island, at the entrance of Port Armyro Potamo, is $1\frac{1}{2}$ miles in length north and south, with an average breadth of half a mile, and 568 feet high. Shallow water surrounds all its projecting points, which at the northern end extends off more than a quarter of a mile.

The passage dividing Petali gulf from Euripo channel between Cavaliani island and Cape Hagia Marina on the south-west, is $1\frac{1}{4}$ miles wide, deep and clear.

Lat. 39° 15' N.
Long. 24° 7' E.

Port Armyro Potamo, or Salt river (from a small pool or salt spring below the level of the sea at its head), runs in about 3 miles north-eastward from Cavaliani, with deep water, but it is seldom visited even by boats. The principal entrance is north of Cavaliani island, as the southern end is only separated from the coast of Eubœa, by a narrow deep passage with shoals on either side.

EURIPO (EVRIPÓS) CHANNEL.—Having passed between Cape Hagia Marina and Cavaliani island, the Euripo channel opens out, and continues north-west by north, and then west-north-west, for about 25 miles as far as Burj.

Limiona bay, on the mainland, is situated about $3\frac{1}{4}$ miles north-westward from Cape Hagia Marina. A jetty 200 feet long, with a depth of 22 feet water at its outer end, is situated on the west side of the bay, for the convenience of vessels loading hematite iron ore, brought down from the mines at Grammatice, in the Marathon district, by a narrow-gauge railway some 9 miles in length. A screw mooring buoy is laid down, and it was intended to arrange for the shipping of 1,000 tons of ore daily.

Chart, 1,597.
Var. $4^{\circ} 50'$ W.

Vessels bound for this bay have to stop at Ergasteria bay (Lavrion) for clearance.

110,200 tons of iron ore were shipped from the Marathon district in 1898.

Aliveri bay.—At Aliveri bay in the north-eastern part of the channel, there is anchorage in 15 or 16 fathoms, rather close in, but the holding ground is good.

Communication.—Steamers running between the Peiræus and Volo, stop occasionally at Aliveri, which is a telegraph station.

Water.—No fresh water can be obtained.

Apostolos bay, on the mainland south-westward of Aliveri, possesses salt springs similar to those at Port Armyro Potamo, with water mills, and storehouses. At 5 miles west-north-westward of Apostolos bay is Oropos bay, where there is anchorage and landing, and on its eastern point a windmill.

Chart, 1,554.

Port Eretria.—The little Port Eretria and village of Eretri, with an isolated hill 427 feet high, on which is the site of the ancient Acropolis, is on the north side of Euripo channel, nearly opposite Oropos bay.

LIGHT.—A *red fixed* light is shown at an elevation of 24 feet from a masonry structure 19 feet high, erected on a rock near the end of the old mole on the western side of the entrance to Port Eretria; it should be visible in clear weather from a distance of 6 miles.

Lat. $38^{\circ} 23'$ N.
Long. $23^{\circ} 48'$ E.

Shoals.—The islets of Vathya to the eastward of the port, are surrounded by numerous rocks and shallow patches, the latter extending about 2 miles eastward of the port, and $1\frac{1}{2}$ miles westward, the whole ranging one or $1\frac{1}{2}$ miles from the shore. A rocky patch with 2 fathoms on it, lies W. by S. $\frac{1}{2}$ S., one mile from the lighthouse and a 5-fathoms patch a quarter of a mile farther in the same direction. Patches with $1\frac{1}{2}$ to 3 fathoms on them also lie half a mile southward of the entrance to the port. These dangers should not be approached, as there are no marks for avoiding them; they are steep-to, and generally visible in the day time. Vessels should keep rather on the southern side of Euripo channel.

North-eastward of these dangers, there is sufficient anchorage space for small vessels in case of necessity, and it can be approached from the eastward by keeping along the Eubœa shore.

Telegraph.—The village of Eretri is a telegraph station.

Burj point.—The round rocky mass surmounted by a ruin called the Burj, on the eastern point of entrance to the outer port of Euripo, is a good mark from the south-eastward; from Oropos bay the distance is about $8\frac{1}{2}$ miles, and the channel clear. Vessels may anchor half a mile south-eastward of the Burj, with the light bearing N.W. by N., in 6 to 8 fathoms, sand and mud.

Plan, 2,802.

Plan, 2,602.
Var. 4° 50' W.

LIGHT.—A *red fixed* light is shown at an elevation of 29 feet from a stone building, 27 feet high, near the extreme of the low point opposite Burj.

Winds.—In entering the Burj and Steno channels, it is necessary in a sailing-vessel to have a fair, or leading breeze, or to have recourse to warping. Vessels running up from the south-eastward in summer with the sea breeze, should be prepared to anchor at any moment, for it frequently happens that the wind does not blow home to the head of Euripo channel, but often on rounding the Burj the wind will be found blowing from the northward, having been diverted by the high range of Mount Delphi, and blowing fresh down from that mountain, it meets the sea breeze up the Euripo channel.

Lat. 38° 24' N.
Long. 23° 39' E.

Burj channel.—This channel, marked by the Burj on the eastern side and the lighthouse just alluded to, on the western side, leads from Euripo channel to Euripo outer port. It has been dredged to a depth of 26 feet, but the depths in the outer port in places diminish to 21 feet, so that only vessels drawing less than 19½ feet can pass through without the assistance of buoys.

Tidal streams.—The tide in the Burj channel rarely exceeds 2 miles an hour.

Burj spit.—Depths under 6 feet extend from the Burj one cable south-westward, and depths under 18 feet extend S.W. by W. 1½ cables. Abreast of this spit, depths under 18 feet extend three-quarters of a cable from the low sandy mainland shore, narrowing the channel with more than the latter depth to 1½ cables. The end of Burj spit is sometimes marked by a black buoy, but it is not to be depended upon.

Directions for Burj channel.—No direct leading marks can be given for this narrow and tortuous channel, and the eye must be the principal guide; but the following observations are given with the view of assisting the navigator. Approaching from the southward, keep the left extreme of Pasha Adasi (an islet visible over the low western point of Burj channel) in line with the right extreme of Fort Kara Baba (opposite the town of Euripo or Khalkis), until the four houses, which are easily seen on Burj point, are in line with each other; then with the helm a-port, round Burj spit slowly and carefully until the vessel's head is pointed northward, keeping nearly in mid-channel or rather nearer the western shore.

From the northward after passing the white tower, keep it in line with Perama point, bearing N. 40° W., until Burj light bears South, whence steer to pass the lighthouse point at a distance of a cable; thence the white tower in line with the right extreme of Fort Kara Baba bearing N. 25° W., will lead clear of the spit.

Should the buoy marking the end of the Burj spit be in place, it will be a good guide, in either case.

A good mark for passing the Burj spit, is the lighthouse in line with the highest hill near the town of Euripo or Khalkis, until near the lighthouse. Then round it at the distance of a cable.

The yellowish hue of the shallow ground extending south-westward from Burj point, will probably be seen in contrast to the deeper greenish water. After passing the lighthouse point at the distance of a cable, keep well to the northward before steering towards the white tower on Beacon rock.

EURIPO OUTER PORT.—The Burj channel leads into the outer of the two ports of Euripo, which extends 3 miles in a N.N.W.

direction; both shores are bordered by banks, but throughout the central part there is anchorage, if necessary, in from 20 to 30 feet, soft mud; a convenient stopping place is northward of Pasha Adasi, in 20 to 23 feet. Around the shores of the outer port, are several bays.

Plan, 2,802.
Var. 4° 50' W.

Krianaru rock.—This rock or islet is situated N.W. $\frac{1}{4}$ W. $1\frac{1}{10}$ miles from Burj channel lighthouse, and marks the south-west side of the channel. A depth of 3 fathoms will be found half a cable outside of this rock.

Kolova (Beacon) rock.—This isolated rock is itself 2 feet above the water, but a white tower 20 feet high has been erected on it. It bears N.E. by N. $\frac{1}{2}$ N. distant 4 cables from Krianaru rock, and has a depth of 28 to 30 feet water around it and between it and the shallow bank $1\frac{1}{4}$ cables north-eastward of it. When in its vicinity, Fort Kara Baba open westward of the mill on the peninsula south of Euripo strait, leads westward of the rock.

Lat. 38° 25' N.
Long. 23° 37' E.

Pasha Adasi.—At the northern end of the outer port, 4 cables eastward of the entrance to Steno pass which leads to the inner port, is Pasha Adasi, an islet about $1\frac{1}{4}$ cables in diameter, the peak of which, 60 feet high, will be seen southward of Burj channel over the lighthouse point.

Water.—On the north-eastern shore, near the head of the outer port, a plentiful supply of water which runs from the rocks may be obtained, though it is not always good for drinking, being impregnated with vegetable matter previous to entering the sea.

Steno pass.—This pass, leading from the outer to the inner port of Euripo, has been dredged to a depth of $19\frac{1}{2}$ feet, and is to be dredged to 21 feet, but is reported not to be safe for a vessel drawing over 18 feet. It is half a mile long and in the narrowest place only 114 feet in width, and is neither beaconed nor buoyed at the present time.

LIGHT.—A *red fixed* light is shown at an elevation of 34 feet above the sea from Perama point on the southern side of the eastern entrance to Steno pass; it should be visible in clear weather from a distance of 6 miles.

Directions for Steno pass.—After passing the white tower on Kolova rock, steer with Pasha Adasi a little on the starboard bow, and approach the pass keeping rather nearer the south entrance point, and then keep in mid-channel, being guided by the chart.

Tidal streams.—The stream at times runs through Steno pass at 2 knots an hour. (See page 75.)

Inner port.—The inner port of Euripo is supposed to be the port *Aulis*, where the Grecian fleet assembled previous to the Trojan war. It is a natural circular basin 7 cables in diameter outside the 5-fathoms line, with an even mud bottom, and from 30 to 36 feet deep. Around the shores of the basin are two or three beautiful coves, and at the north-eastern part, the strait and town.

Shoals.—Vurkos bay, one of the coves just mentioned, is on the eastern side of the inner port. It is very shallow, and not more than 3 fathoms will be found half a cable westward of the line of its entrance points. From the shore of the cove in the south-west corner of the inner port, a shallow flat makes off $1\frac{3}{4}$ cables.

A patch with 9 feet on it, lies $1\frac{1}{2}$ cables from the north shore, bearing W. $\frac{1}{2}$ S. $4\frac{1}{2}$ cables from the bridge.

Plan, 2,802.
Lat. 38° 27' N.
Long. 23° 36' E.
Var. 4° 50' W.

From the shore three-quarters of a cable westward of the bridge, a spit extends southward the latter distance, where there is a depth of 18 feet.

Anchorage.—The best anchorage is in the middle of the inner port.

EURIPO (KHALKIS).—The principal town of Eubœa, with a population, in 1896, of 8,661, is at that part of the island where it is separated from the mainland by the narrow strait called by the same name. It is a walled town, and further defended, where the walls are not washed by the sea, by a deep and wide dry ditch. The walls are turretted, slight, and built without regularity, and there appears to be no doubt of their Venetian origin. The area enclosed is about 800 yards north and south by about 500 yards in breadth; the streets are narrow, but the houses are capacious. It has several gates constructed with great intricacy.

Another defence is Fort Kara Baba, on the main, which stands on an eminence about 130 feet high, commencing its rise immediately from the bridge. The fort overlooks and commands the town, but it is a misshapen structure of an oblong form, about 280 yards long, and 100 broad; the walls are in places so low that an active man might vault over them, and they are similar to and coeval with the walls of the town.

Outside the town to the north-east, is a suburb appropriated to trade. The houses here are small, the shops contain general stores, articles of dress, or are coffee-houses, but there is little or no trade.

Supplies.—The market is well supplied, especially with fish; beef is difficult to be procured, but mutton is plentiful. Water is scarce and obtained chiefly from wells.

Communication.—Euripo is connected by railway with Athens. Greek steamers from Athens and Volo call frequently. Telegrams can be sent to all parts of the civilised world.

BRIDGE.—This is a swing bridge in two parts opening northward and fitting into masonry arranged for that purpose. The bridge is opened by day in response to a steamer's whistle, when the current is not too strong.

A white ball hoisted on a staff, denotes the bridge is open to a vessel coming from the south; and a red ball, for a vessel coming from the north.

The bridge is also opened at night upon request, and under all circumstances for men-of-war. Sailing-vessels and the larger steamers should only attempt the passage at slack water.

Euripo strait at the bridge is 129 feet wide, and is intended to be 28½ feet deep, but in 1905 it was reported that there were only 21 feet. The walls of the town are being gradually demolished and the moat filled in. The old bridge towers have been destroyed.

Tonnage dues.—The following are the dues imposed upon merchant vessels passing through Euripo strait, vessels-of-war of all nations being exempted:—

- a. Vessels from 3 to 20 tons, 50 lepta per ton.
 - b. Vessels of more than 20 and up to 50 tons, 40 lepta per ton.
 - c. Vessels of more than 50 and up to 100 tons, 30 lepta per ton.
 - d. Vessels of more than 100 and up to 300 tons, 20 lepta per ton.
 - e. Vessels of more than 300 tons, 15 lepta per ton.
- One drachma = 100 lepta = about 9½d.

Tides.—It is high water, full and change, at Euripo bridge, at 5h. 15m.; springs rise about 2 feet, neaps are irregular.

Plan, 2,802.
Lat. 38° 27' N.
Long. 23° 36' E.
Var. 4° 50' W.

On the northern side of the bridge, the mean spring rise is about 2½ feet, but in the months of July, August, February, and March, the rise is 3 feet. On the southern side of the bridge, the spring rise is seldom as much as 2 feet. The neap range is irregular, and at times only a few inches. With southerly and south-westerly gales, a sudden rise of 6 feet has been experienced.

Tidal streams.*—At full and change, the stream commences to run to the northward at about 8h. 15m. a.m., or nearly at half ebb, and to the southward at 2h. 20m. p.m.; except for a few days at neaps, both streams set about 6 hours each way, attaining at springs a velocity of 6 or 7 knots an hour, which gradually decreases to neaps. During neaps, the stream is irregular, and its strength from half to one knot an hour, but at times during this period there is but little tidal movement.

Both streams are regular in the changes from New moon to the First quarter (or within a day or two of its occurrence), then irregular for 2 or 3 days; again regular to Full moon and until the Last quarter, and again irregular for 2 or 3 days, and then again resume a regular course. During the regular period, the change of the stream is about 40 minutes later each day, but much influenced by the winds; slack water occurs at half tide by the shore, and usually only lasts for about 10 minutes. When the stream has run for about 3 hours from the north to the south of the bridge, it will be high water on the north, and low water in the basin on the south; and vice versâ with the other tide.

With southerly and south-westerly gales the velocity of the tidal stream from south to north is increased to 8 or 8½ miles an hour for the first day of the gale; followed, probably on the second day, by a rush of equal strength to the southward.

The tidal stream in Steno pass and Burj channel seldom exceeds .2 miles an hour.

Directions for Euripo strait.—With proper care and commanding speed, steam-vessels, excepting the largest, may pass through without difficulty in any condition of weather or current.

It will be necessary for a sailing vessel at anchor to be under weigh before slack water, which cannot be calculated at times to 15 or 30 minutes, and be prepared to pass the bridge immediately the flag is shown as a signal that it is open. This flag is shown from a staff close to the bridge on the town side. At present there are no tugs in the vicinity.

The strait north of the bridge is bordered on either side by shoal water, which leaves in the central part, a narrow but clear passage. At the point of the Quarantine establishment (in ruins) on the main, 4 cables from the bridge, rocky shallow ground extends off half a cable, and also the same distance from Tekies point on the opposite side of the strait; the extremes of these shoals are at times marked by buoys, the passage between them is about 120 yards wide, and with the buoys in position there will be no difficulty by keeping in mid-channel.†

Telegraph cable.—A cable crosses the strait between these shoals.

Charts, Nos. 2,836b, 426, 1,554.

* From observations and remarks by Captain Mansell, R.N.

† There were no buoys anywhere in Euripo strait in Aug. 1905.

Plan, 2,802.
Var. 4° 50' W.

LIGHTS.—At about 100 yards from the end of the point on the west side of the strait about 2 cables north of the Quarantine establishment, is a frame lighthouse, from which a *white fired* light is exhibited at an elevation of about 39 feet above the sea, visible in clear weather from a distance of 7 miles.

On the east side, at 40 yards within Kaki Képhali point from a lighthouse 40 feet high, a *red fired* light is exhibited elevated 68 feet above the sea, visible from a distance of 14 miles in clear weather, from the bearing of N. 1° W., through north, to S. 89° W.

Rocks.—A patch of shoal ground with less than 6 feet on it lies with its shallowest spot bearing E. by N. $\frac{3}{4}$ N., distant $1\frac{3}{4}$ cables from Kaki Képhali lighthouse; shoal water under the depth of 4 fathoms extends $1\frac{1}{2}$ cables further eastward. A shoal with $4\frac{1}{4}$ fathoms water over it, lies N.N.E. $\frac{1}{2}$ E., distant 8 cables from Kaki Képhali lighthouse. Other points of the coast of Eubœa farther northward and forming the anchorage are foul half a mile off.

Chart, 1,554.

North roadstead of Euripo.—The space from Kaki Képhali lighthouse northward to the parallel of Cape Gaidaro, being the south-eastern part of the Talanta channel, may be considered the northern roadstead of Euripo, as, with the exception of the shoals just alluded to, there are anchoring depths all over it, in from 17 to 10 fathoms, mud bottom, sheltered from the westerly winds by Cape Gaidaro and the shoal which extends nearly two-thirds of a mile north from it; in the winter season it would be advisable to anchor within about a mile of the town of Euripo.

[The North roadstead of Euripo, with lights, is repeated at page 130, where the Talanta channel is described.]

Chart, 1,820.

DORO CHANNEL (KAPHIRÉUS), between Eubœa and Andros islands, is 6 miles wide; the wooded sides of Eubœa present an agreeable aspect, in contrast with the dry rocky appearance of Andros island. The north-western side of the channel is bounded by the base of Mount Okhi, which forms generally a steep rugged coast with a small bay or cove here and there, the only off-lying danger being a rock which shows well at low water, and is awash at high water, lying a long cable north-eastward of Kastri point, the north-east entrance point to the bay of that name; within it are some shallow patches.

Lat. 38° 6' N.
Long. 24° 29' E.

Mount Okhi, about 7 miles north of Cape Mandili (the south-eastern extreme of Eubœa), rises 4,840 feet high; it has three distinct peaks, and its sides a short distance down on the north, and south, are clothed with groves of splendid chestnut trees.

Mandili (Myrto) islet.—At the foot of Cape Mandili, is the islet of the same name, 286 feet high, nearly a mile in length, and separated from the cape by a deep passage a third of a mile wide. (For south-west coast of Eubœa, see page 67.)

Cape Doro.—The coast of Eubœa from Mandili islet, trends north-east, and north for $13\frac{1}{2}$ miles to Cape Doro, a high bold prominent headland and the north-western entrance point of Doro channel from the north-eastward. The little islet of Doro, 93 feet high, lies about one-third of a mile to the eastward face of the cape. (For north-east, and north coasts of Eubœa, and mainland to the northward, see page 138.)

The south-eastern side of Doro channel is bounded by the north-west coast of Andros island, which is steep and rugged, with no off-lying dangers. Sailing-vessels should not approach this part of the island too near in light winds, on account of the current. Andros island is frequently obscured during autumn and winter, both with south-west and north-east winds.

LIGHT.—At Cape Phassa, the north-western point of Andros island, and about half a mile inland, is a stone lighthouse 70 feet high, from which a *fixed white light*, varied by a *flash every three minutes*, is exhibited at an elevation of 708 feet above the sea. The light is visible seaward from a distance of 30 miles in clear weather, when bearing from N. 5° E. through East, to S. 59° W. The period of this light was reported in 1906 to be only *two minutes*.

Chart, 1,820.
Lat. 37° 58' N.
Long. 24° 42' E.
Var. 4° 40' W.

Andros island, north-west coast.—From Cape Phassa, this coast trends with a slight curve east-north-east 5 miles to Cape Kabanos, the south-east entrance point of Doro channel from the north-eastward. (See page 262.)

Between Cape Phassa and Goremi point nearly 6 miles to the southward, the coast of Andros island is irregular, cliffy with a few sandy bays, and has deep water all along. On Pyrgo point 1½ miles to the eastward of Cape Phassa is a conspicuous ruined tower. Cape Nikolo, 2½ miles from Cape Phassa, is the termination of a tongue of land projecting a little more than half a mile from the coast, and in approaching from the northward appears like an island till within 10 miles of it, when the intervening land becomes visible. At three-quarters of a mile eastward of Goremi point, is Kastro head, a cliffy bluff about 200 feet high, forming the western entrance point of Port Gavrión. (See page 79.)

Plan, 1,827.

Winds.—The navigation of Doro channel is one of the difficulties of the Levant, especially in sailing-vessels, as the strong northerly winds which prevail during the summer months may be said scarcely to cease for upwards of four months of the year, viz., from the beginning of May until the end of August or middle of September; and after the autumnal equinox, although they do not so constantly prevail, gales from that quarter are as heavy and frequent as from other points of the compass.

Chart, 1,820.

It is to be observed that these strong winds through the Doro channel, which form such an impediment to vessels bound to the eastward, are often during summer strictly local, and do not interfere with the sea breezes which blow freshly into the gulfs and bays during the day; nor with the land winds which draw off the mountains at night. In this season, it is common for vessels to pass Cape Colonna in the forenoon with a fresh breeze from the gulf of Athens and carry it nearly as far as the north end of Zea, where they meet a strong breeze blowing through the Doro channel.

In these cases it is not advisable to attempt to pass northward of Zea, for although there may be every appearance of being able to weather the island, there is danger in too close an approach, for it is almost certain that near the northern point the wind will fail, with a heavy surf beating on the rocky shore, a strong current setting towards it, and the water too deep for anchoring. (See Mykoni channel, page 264.)

Current.—The general current from the Dardanelles, which sets towards the western part of the Archipelago, is much accelerated by the strong northerly or north-easterly winds, and causes the stream in the Doro channel to run with great strength. In December, 1905, during a strong northerly wind, H.M.S. *Sentinel* experienced a southerly set of 7 knots. In working through the Doro with a moderate breeze from the north-east, a weatherly current for some miles has been found on the coast of Eubœa. (See page 139.)

Chart, 2,836b.
Lat. $38^{\circ} 10' N.$
Long. $25^{\circ} 17' E.$
Var. $4^{\circ} 40' W.$

KALOYERI ROCKS or the MONKS.—These consist of two detached rocks, one large, the other small, lying in the fairway between the Doro channel and ports to the eastward. The Great Kaloyeros is a barren volcanic heap about 120 feet high, with a chain of rocks extending south-eastward, free from all known hidden dangers, and bears about E. by N. $\frac{1}{2}$ N. distant $25\frac{1}{2}$ miles from Cape Kabanos, the north point of Andros island. The Great Kaloyeros at a distance of 8 or 9 miles to the north-west has been taken for a sail. It makes in the form of a sugar loaf, except when viewed from the south-west, when it appears split in two.

The Little Kaloyeros is only about 4 feet above the water, and about the size of a small boat, with a reef extending about half a cable to the southward, on which the sea breaks; it lies three-quarters of a mile north-eastward of the Great Kaloyeros.

Plan, 1,827.

ANDROS ISLAND.—Gavrion bay.—Vessels unable to work through the Doro channel, and having to seek shelter during strong northerly gales so prevalent during the summer months, especially from May to September, instead of beating about in these gales under the lee of Andros, or bearing up for Port St. Nikolo of Zea, Ports Raphti, Mandri, or Legrana bay near Cape Colonna, are recommended to take shelter either in Kárystos bay in Eubœa, or in Gavrion bay on the south-western side of Andros, and thereby save much time and anxiety.

Gavrion bay affords ample and excellent anchorage anywhere eastward of the port, between the islands fronting it and Phurnos bay. The depth of water immediately eastward of the port, is 7 to 9 fathoms, gravel, sand, and weeds; but the best anchorage is in from 17 to 20 fathoms, between Megalo islet and Phurnos bay. The bay is open to the southward, and vessels finding it inconvenient can put to sea, or enter Port Gavrion where the wind from this quarter never blows home.

LIGHT.—A *red fixed* light, elevated 225 feet above the sea, is shown from a stone lighthouse, 26 feet high, on Kastri head, the western entrance point of Port Gavrion; it should be visible in clear weather from a distance of 7 miles.

Gavrion islets are a group of seven islets and rocks, of which Megalo the largest is more than 6 cables in length north and south, narrow, with a hill 190 feet high at its southern end; the other islets extend north-west, and west from it about 7 cables. The east and west sides of the group are clear of danger, but shallow water extends north and south from the islets, except the south end of Megalo; Turlleta, the south-western islet, is also clear. From Plati, the north-western of the group, shallow water extends $1\frac{1}{2}$ cables to the north-north-eastward, narrowing the passage between it and Vovi shoal to $3\frac{3}{4}$ cables.

Vovi shoal.—This shoal in the approach to the anchorage, lies between Plati and Akra point, the east point of Port Gavrion, having a channel 3 cables wide and 6 to 9 fathoms deep between it and the latter point. It is 2 cables in length north-east and south-west, three-quarters of a cable in breadth, and has only 2 feet water on its shoalest part near the south end, which is named Vovi rock. In the centre of the shoal is a patch with 6 feet, and near the north end, one with 9 feet water on it; in other places the depths vary from 2 to 4 fathoms. This danger is much in the way of vessels passing between the islets and Port Gavrion to the anchorage off Phurnos bay.

Directions.—The summit of Jura island S. $\frac{1}{2}$ W. open westward of the summit of Gaidaro (120 feet high), the western islet of the Gavriion group, leads westward of Vovi shoal; Turlleta, the small sugar loaf islet and south-western of the group bearing S. by W. open of the extreme of Gaidaro, also leads westward of the shoal. Plan, 1,827.
Var. 4° 40' W.

The monastery on the hill eastward of Phurnos bay, E. by N. $\frac{1}{2}$ N. open its own breadth of Koruni head, leads between Vovi shoal and the shoal extending northward from Plati islet; or, a vessel may enter Phurnos bay, northward of Vovi shoal, by passing Black rock (off the eastern side of entrance to Port Gavriion) at the distance of a cable.

Port Gavriion is about 7 cables deep, $2\frac{1}{2}$ cables wide in the entrance, and carries from 13 fathoms water at the entrance to 3 fathoms at a cable from its head, over a bottom of sand, mud, and weeds; the port is open southward, and terminates at its head in a tranquil sandy beach, fully indicating its safety, as southerly winds never blow home, and any great sea or swell is broken by the islets fronting it. Lat. 37° 53' N.
Long. 24° 45' E

To a small vessel seeking shelter in a southerly gale, after having passed through the Doro channel, it is conveniently situated, but it is difficult of access in a sailing-vessel during strong northerly winds, owing to the heavy gusts from the high land, and also from the baffling winds which prevail when the wind is moderate from that quarter.

From Akra point (the eastern point of the port) eastward, are several small shingle beaches interrupted by rocky projecting points, off which are rocks above water, besides patches of foul ground nearly 2 cables from the shore; then follows a sandy bay named Petros, which is separated from Phurnos bay by the small peninsula forming Koruni head, distant a little less than a mile from the nearest Gavriion islet, and between which vessels may anchor.

Supplies, Water.—Supplies can be obtained in small quantities at Port Gavriion, and water by sinking a well in the plain near the shore. In Leukos bay, rather more than a mile south-eastward of Phurnos bay, from a spring which trickles down a ravine, a plentiful supply of water may be obtained.

Communication.—There is steamboat connection with Constantinople, Crete, Syra, and other ports.

Port Gavriion is also a telegraph station.

[For further description of Andros island, see page 261.]

[For continuation to Soloniki and the north, see Chapter V., page 130, and to Smyrna, see Chapter VI., page 178.]

CHAPTER IV.

THE COAST OF TURKEY IN ASIA AND IN EUROPE FROM CAPE
HYDRA OR ASLAM BURNU, TO THE KARA SU RIVER,
WITH THE ADJACENT SPORADES ISLANDS.

For Psara and Khios islands and the entrance to the gulf of Smyrna, see p. 178 *et seq.*

Chart, 1,902.
Var. 3° 50' W.

The GULF of SANDARLI or Chandarli (ancient *Cumæus Sinus*) extends eastward upwards of 13 miles from the line joining Cape Hydra on the south and Cape Mal-tepeh on the north, which are nearly 13 miles apart. Its shores are irregular, broken with bays and indentations, and bold headlands, with low marshy ground. The town from which the gulf derives its name, is on a peninsula, on the northern shore.

The gulf is liable to strong and sudden changes of wind. The most prevalent are the "meltems" or northerly winds, which come on suddenly and blow hard, but generally give warning, as previous to these gales the summit of Mount Karadagh on the north shore is covered with dense masses of vapour. At other times during the summer months, the sea and land breezes are tolerably regular.

Lat. 38° 46' N.
Long. 26° 50' E.

Cape Chemali (*Sekertzek*).—Between Cape Hydra (page 194) and Cape Chemali, 4 miles eastward, the coast is bold, irregular, and steep-to. At nearly one mile from Cape Hydra and close in shore, is the little islet of Sera, and between it and the shore are sunken rocks; at two-thirds of a mile eastward of the islet, is Chanakia liman, an inlet about two-thirds of a mile deep and a quarter of a mile wide, with from 22 fathoms water at the entrance to 5 fathoms near the head, and open to the north-eastward. A shoal extends a cable northward from Cape Chemali, and about 1½ miles south-eastward of it, is the bay of Foggia Nova.

Plan on 2,836b.
Chart, 1,902.
Lat. 38° 45' N.
Long. 26° 51' E.

Foggia Nova.—The bay of Foggia Nova or Naes Foyes is about 6 cables deep, and nearly the same in breadth, though its entrance is narrowed to about 4 cables.

The bay is open to the northward, but as there is not much fetch and the holding ground good, there is no danger in anchoring here. When entering, keep at a moderate distance from the eastern shore, and anchor in 8 or 9 fathoms water, about 4 cables from the town at the head of the bay, bottom mud and weed.

Shoal.—A shoal named Xero Punda, with only one foot of water on it, lies about 2 cables north-eastward of the west entrance point, and thence to Aspro Kavo at half a mile north-westward of the point, the coast is fronted by shoal water which also borders the shore of Foggia Nova bay all round, to a distance of about 2 cables.

Supplies.—Small quantities of water, and refreshments may be procured.

Namurt liman.—At nearly 5 miles north-eastward of Cape Chemali, is Cape Utch-keucheh, the termination of a bold cliffy tongue of land with a sunken rock off it, which is steep-to; the cape should be given a berth of 2 cables. Between the two capes, the coast forms a deep bight, at the head of which, a projecting point with three little islets or rocks on its western side connected to the shore by shallow ground, separates two bays, that to the north-eastward being Namurt liman. The shore of this bay is bordered all round by shallow water and rocks, and within the shore at its head, is a farm and the ruins of ancient *Cyme*. Chart, 1,902.
Var. 3° 50' W.

PORT ALI-AGHA.—The coast from Cape Utch-keucheh to Tasli burnu $2\frac{1}{2}$ miles eastward is irregular, of cliff and beach, and bordered by shallow water and rocks. Plan, No. 515.

Port Ali-agma is nearly circular, $1\frac{1}{2}$ miles in diameter, open to the north, with an entrance two-thirds of a mile wide. The southern and eastern shores are bordered by shallow water, and at the head of the port the 3-fathoms patches extend off more than half a mile, but the anchorage is spacious, in from 14 to 5 fathoms water, sand and mud, and good holding ground. There is no fresh water, and nothing in the shape of supplies can be obtained.

Tasli burnu, on the western side of entrance to Port Ali-agma, is a sharp projecting rocky point with shoal water around it to a distance of $1\frac{1}{2}$ cables.

Tuzla burnu, the eastern entrance point, is low and marshy with salt pans and a fishery backwater, and is also bordered by shallow water.

Agios Ioannis islet, surrounded by shallow sunken rocks, lies in the south-west corner of the port, and on it, is a conspicuous house. Lat. 38° 49' N.
Long. 26° 57' E.

Coast.—The shore between Ali-agma and Bektasat Sakan, about 4 miles north-eastward of the former is irregular and skirted by rocks which extend off shore to a distance of $1\frac{1}{2}$ cables in places; at a mile from Ali-agma is the outlet of the Guzel Assar Chai, on the west side of Mount Deirmi, from the base of which and the delta of the river, shoal water extends northward nearly a quarter of a mile, and is steep-to. Mount Deirmi is a remarkable conical hill close to the sea. (See view on chart No. 1,902.) Chart, 1,902.

Bektasat Sakan, also called Port Glymi, is a large expanse of water extending over a space of $2\frac{1}{2}$ miles north-east and south-west, by $1\frac{1}{2}$ miles. The greater portion of it is shallow and under a depth of 3 fathoms, but the central part is $3\frac{1}{2}$ to 4 fathoms deep. The shallow water extends across the entrance from point to point which are $1\frac{1}{2}$ miles apart, and between them, are the two little Sakran Adalari islets united by a reef; north-eastward of the islets, the depth over the shallow ground is only 3 feet. The deepest water into the port is about $7\frac{1}{2}$ feet, and nearly midway between the south-western point and the islets.

Rema bay.—This bay is in the north-eastern corner of the gulf, and the inner part of it is very shallow. The anchorage for small vessels is south-west of the Custom-house pier, in 5 or 6 fathoms, mud. Elæa, the ancient port of *Pergamos*, within the head of the bay, was once a port of considerable importance, but now, owing to the recession of the sea, it cannot be approached. Among the ruins scattered about, are the remains of an ancient mole. The bay abounds in flat fish, and particularly stingrays, which are dangerous to handle, and inflict most painful wounds, difficult to cure. Mount Sakarkeya, on the eastern side of the bay, is 1,240 feet high. Plan on 2,836b.

Plan on 2 8856.
Var. 3° 50' W.

Sandarli.—Between Rema bay and Sandarli harbour nearly 5 miles westward, the shore is low, flat, marshy, and bordered by shallow water to a distance of a quarter of a mile. The Bakir Chai (ancient *Kaikos*) runs into the sea about 2 miles east of Sandarli. Sandarli harbour is a little bay 10 to 6 fathoms deep, on the eastern side of a tongue of land on which is situated the town of Sandarli. An islet, called Eski Adasi, lies in the entrance of the harbour, and should be left on the starboard hand in entering; the eastern passage is narrow and only 5 fathoms deep. A shoal extends off about half a cable from the north end of Eski Adasi. There is nothing to be obtained here.

Chart, 1,902.

Plati and Adelphi islets.—In the entrance to the gulf are five small barren islets, which with the exception of the Adelphi, are steep-to. The Adelphi, the two northernmost islets, are close together and surrounded by a rocky shoal which extends a quarter of a mile westward, where there are 4 fathoms water; the east end of the north-eastern islet is steep-to.

Agios Georgios islands.—These four islands or islets, the largest being rather more than one mile in length in a north-westerly and south-easterly direction, front the coast south-eastward of Cape Mal-tepeh. Kormen Adasi, the southern islet, is wedge-shaped with the thick end to the southward, and 40 fathoms water close to it, but a depth of 4 fathoms extends about 2 cables to the westward of the north point. Tzorzi Kalesi, the next and largest, has a conspicuous old tower on it; on its western side is a bay with a little islet connected with the shore by shoal ground, and rocks skirt the shore north of the bay. A shoal with 2½ fathoms water on it, extends off a cable, a little eastward of its north-eastern elbow.

Eki Kardarslar, the two northern islets, are small and close together, with shoal water around them. The Agios Georgios islands extend over a distance of 2½ miles, with deep water midway in the channels between them.

Coast.—From Sandarli to Chinarli burnu a distance of 4 miles is broken and irregular, but shoal water nowhere extends more than 2 cables from the shore. Chinarli burnu is also bordered by shallow water, which is steep-to. The coast of Chinarin burnu, 2 miles to the north-westward, is skirted by rocks and shallow water, extending off nearly 2 cables, between which and the shoal water of Eki Kardarslar, the passage is about a third of a mile wide, and from 19 to 30 fathoms deep.

Lat. 33° 57' N.
Long. 26° 49' E.

Cape Mal-tepeh (ancient *Cana* prom.) is a bold headland, and the western termination of Mount Karadagh, which is about 3 miles inland, and 2,560 feet high. The shore of the cape is skirted by rocks to a short distance seaward. (For continuation of this coast, see page 91.)

Chart, 1,665.

MITYLENI (pronounced Mitilini).—This island is 38 miles in length in a W.N.W. and E.S.E. direction, and 24½ miles nearly in extreme breadth. It is mountainous throughout, and some of the hills are well wooded. The greatest elevations are Mount Olympus, 3,080 feet above the sea, in the south-eastern part; Mount Lepethymnos, 2,752 feet high, in the northern part; and Mount Ordymnos, 1,780 feet high, near the west end.

Population, Trade.—The population in 1906 was estimated at 135,000, of which number 121,000 were Greeks. The exports are olive oil, soap, and valonea. The imports are cotton and iron goods.

In 1906, there entered the port of Mityleni, 1,489 steamers with a tonnage of 779,205 tons, and 2,822 sailing-vessels with a tonnage of 26,781 tons; of these 110 steamers of 175,763 tons were British.

Chart, 1,665.
Var. 4° W

The island is considered very healthy, the only exception being during the autumn, in the marshy districts north-westward of port Iero and north of Port Kalloni, at which season malarial fever is prevalent.

Mityleni town, the capital of the island, is on the eastern coast about 6 miles from its south-eastern extreme, on a small peninsula which forms a little port on either side. Of these, North port is the more commodious, with from 5 to 2 fathoms water, partly sheltered by the remains of a pier projecting north-westward from the angle of the citadel; it is frequented by the larger vessels that visit Mityleni. South port, from 3 to 1½ fathoms deep, is the best harbour for small coasters and the more frequented; the entrance is between two old mole heads, on each of which, is a white house with a red roof, and mast.

Plan, 381.
Lat. 39° 6' N.
Long. 26° 34' E

The town itself presents a most thriving appearance from the sea, is clean and well built. The hill sides for some distance around are covered with villas and orchards.

LIGHTS.—On the point near the citadel, between the two ports of Mityleni, is a white house with a mast on it, from which is exhibited at an elevation of 99 feet above the sea, a *fixed red* light, visible in clear weather from a distance of 6 miles.

Also, at South port, a *fixed red* light is shown from each mole head at an elevation of 23 feet above the sea, visible in clear weather from a distance of 6 miles.

The anchorage off the town is in about 10 fathoms, sand and weed, with the entrance or lights of South port bearing about W.N.W. or N.W. by W., and the light on the extreme of the peninsula N. ½ E., or if necessary farther out.

This anchorage and Kabakum bay on the mainland opposite, are good stopping places, according as the wind is westward or eastward of South, when unable in a sailing-vessel to work up the Gulf of Smyrna.

Shoal.—A patch with 4½ fathoms over it, lies two-thirds of a cable eastward from the lighthouse near the citadel.

Communication. — There is telegraphic communication between Mityleni and the rest of the world, also good postal arrangements, there being frequent steamers belonging to various companies to Constantinople and Smyrna; also occasional connection with Saloniki, and the ports of Mityleni island. The Khedivial steamers call here weekly between Alexandria and Constantinople. A good road leads from the town to Port Iero.

Consul.—A British Vice-Consul resides here.

Supplies can be obtained at the town of Mityleni at moderate prices.

Coal.—About 3,500 tons of Heraclea coal are imported annually, 1,500 tons being usually in stock; it is put on board in lighters, each carrying 30 tons. Working night and day, about 800 tons can be put on board in 24 hours.

Cape Zeitin (ancient *Malea*).—The coast between the town of Mityleni and Cape Zeitin, the south-eastern extreme of the island, is bold, and Mount St. Marino rises over it 1,740 feet high. At about half a mile from the shore, there are from 12 to 20 fathoms water.

Plan, 1,664.
Lat. 39° 1' N.
Long. 26° 37' E

Plan, 1,664.
Var. 4° W.

Shoals.—Off Cape Zeitin a shoal, with 3 fathoms water on it, extends $1\frac{1}{2}$ cables southward from the shore, and should be given a wide berth. A large rock rises from the shoal close in, and $6\frac{1}{2}$ cables westward of it, is another named Simblo or Beehive. The entrance to Port Iero is about $2\frac{1}{2}$ miles westward of the cape, and will easily be recognised. (*See* views on charts Nos. 1,664, 1,665.)

PORT IERO or OLIVIERI is a fine land-locked basin of water, 4 miles long in a north-north-west and south-south-east direction, $2\frac{1}{2}$ miles broad, with depths of 7 to 10 fathoms, mud bottom, and affords well-sheltered accommodation, with good holding ground, for a considerable number of large vessels. It is surrounded by hills covered with olive trees, and backed by mountainous land.

The entrance to the port is through a narrow channel with depths of from 6 to 17 fathoms, about $3\frac{1}{2}$ miles long, and in some parts not more than one cable broad; the outer entrance of this channel, which is about 4 cables wide, may be recognised from seaward by White Crag hill 60 feet high (on the west side of the channel), with a small building, a short distance south-west of it, and by the island of Prophylaki, to the southward.

Foul point, on the south side of the outer entrance, has a detached cliff near its extreme point, by which it may be distinguished, and terminates in a shingle beach, with a reef extending one cable in a northerly direction.

Mid rock, about $2\frac{1}{2}$ cables northward of Foul point, is small and black, with a smooth top, and about 6 feet high; it is not easy to recognise from seaward, being the same colour as the background.

Reef rock, about 15 feet high, and of a light brown colour, lies on the extremity of a narrow spit extending nearly 2 cables in a south-easterly direction from the point at the foot of White Crag hill. (*See* view on plan, No. 1,664.)

Square rock, on the western side of the channel, half a mile northward of Reef rock, has a shoal extending from its south-eastern side. At the extremity of this shoal, distant 75 yards S.E. by E. from the rock, there is a depth of $3\frac{1}{2}$ fathoms, with 6 fathoms close-to.

Lat. $39^{\circ} 1' N.$
Long. $26^{\circ} 34' E.$

A rocky ledge extends 50 yards from the point on the east side of the channel, 2 cables northward of Reef rock. A white house near the east shore 6 cables northward of Square rock, touching the east side of Square rock N. by W., leads close outside this ledge.

The channel in this part, is also contracted by a shoal that extends some distance from the point on the shore north-eastward of Square rock; from the most salient point of this shoal, Entrance house (ruin) appears just open northward of Square rock bearing S.W.

Northward of Square rock the channel widens, and is fairly straight for a distance of 2 miles to abreast Perama Skala village on the western side of the channel. Off Perama Skala, and in the bay opposite, there is sufficient space and depth for several vessels of the heaviest draft to moor.

From Perama Skala into Port Iero, the deep-water channel in which there are depths of 5 to 8 fathoms, lies near the eastern shore; the narrowest part of this channel is only half a cable broad.

A long continuation of southerly winds, is said to increase the depth of water from one to 2 feet, and northerly winds to decrease the depth the same amount.

Caution.—No vessel drawing more than 24 feet water, should attempt this passage without previously sounding and buoying it.

Plan, No. 1,664.
Var. 4° W.

Directions.—In fine weather and during daylight, steam vessels may steer with confidence for Port Iero. White Crag hill and Prophylaki island cannot be mistaken; Reef rock will also show as the entrance is neared.

White Crag hill, bearing N. 62° W., and just open north of Reef rock, leads in 17 to 19 fathoms between Mid rock and the reef extending from Foul point.

After passing Mid rock, open Reef rock on the port bow, and steer in mid-channel, altering course gradually to the northward until Square rock opens on the port bow. Mount Lutro bearing N. 14° W., in line with the white house in the bay 6 cables northward of Square rock (already mentioned), just clears the shoal off the latter in 5 fathoms; Mount Lutro should consequently be kept just open to the eastward of the house, in passing the rock.

After rounding the shoal, keep in mid-channel as far as Perama Skala. The narrow channel northward of this village should not be attempted in a large vessel without local knowledge, or without being buoyed.

Lat. 39° 3' N.
Long. 26° 32' E.

Sidero island, which lies about three-quarters of a cable from the eastern point of the north-western entrance of this channel, may be passed at a distance of half a cable to the westward.

Anchorage.—The best anchorage is in the north-west part of the bay, about half a mile south of the hot baths, in 6 fathoms of water, mud.

Caution.—Vessels cannot enter or leave port Iero at night, or in thick weather with safety; it would also be hazardous for vessels of heavy draught to attempt to enter the port in a southerly gale.

Telegraph.—There is a good road from Port Iero to the town of Mityleni, a distance of 2½ miles, whence telegrams may be sent to any part of the world.

Water.—There are several streams running into Port Iero, from which fresh water can be obtained, but as they nearly all run through marshes, it would not be advisable to use the water except for cooking or washing. A specimen of water obtained from the clearest stream was analysed in the summer of 1877, and found to be sufficiently pure and safe for all domestic purposes; some water from a warm spring was also analysed, but was not deemed fit for drinking or culinary purposes.

Supplies.—There are some small villages near the shores of port Iero, where supplies of beef, vegetables, and bread of good quality can be obtained.

Coast.—The little islet of Prophylaki lies 6 cables from the shore on the western side of entrance to port Iero, and has deep water all round it. At 1½ miles westward of Prophylaki, is a small bay named Petras, with two little islets in front of it. From Petras bay, the south coast of Mityleni trends westward 5½ miles to Meriko point, and then more northerly for 11 miles to Cape Vurkos. Meriko point is slightly salient, and the shore east and west of it is bordered by shallow water to a distance of about a quarter of a mile.

Chart, 1,665.

Potamos point 3½ miles westward of Meriko point, has some rocks at its base above water, and a shoal extending off nearly 2 cables; between Potamos point and Cape Vurkos, the shore is also bordered by shallow ground.

Chart, 1,665.
Var. 4° W.

Telegraph.—At $1\frac{1}{2}$ miles to the westward of Meriko point is the village of Potamos, from which a road about $1\frac{3}{4}$ miles long leads to the village of Plumari, a telegraph station.

Cape Vurkos is a projecting point, and at a third of a mile within its extremity, is a church; close-to, is a rock above water, and a chain of sunken rocks extends half a mile south-eastward of the cape, the outer of which with less than 6 feet water on it, is called the Falcon. These dangers are steep-to, and the cape should be given a wide berth.

Khoklakari bay, on the eastern side of Cape Vurkos, affords temporary anchorage during off-shore winds, but it is exposed to the southward, and winds from that quarter send in a heavy sea.

Plan on 1,665.
Lat. 39° 5' N.
Long. 26° 6' E.

PORT KALLONI.—The entrance to this port, formerly called Port Longone, is 6 miles north-westward of Cape Vurkos. The port is a beautiful sheet of water, extending into the island $11\frac{1}{2}$ miles in a north-easterly direction, and in the inner part, 4 miles wide, with from 10 to 4 fathoms water, muddy bottom. On the eastern side of the entrance, is a cliffy cape and an islet, both named Kalloni, with a passage a little more than half a cable wide, and 4 fathoms deep, between the shoals bordering the two.

The ship passage north-westward of Kalloni islet (Garbia), is contracted by an extensive rocky bank named Plati, stretching from the western shore and covering the entrance of the port, but leaving a narrow channel half a mile in length, and about 70 yards wide, in which the depths are from 14 to 18 fathoms water.

Off the point on the south side of the channel $6\frac{1}{2}$ cables above Kalloni island, rocks which show above water extend for 30 yards, and shoal water of less than 3 fathoms for about half a cable.

Within the Plati bank, is a large open space called Agia Pandelesmona bay; it is about a mile in length, 10 to 14 fathoms deep, with Erimo-nisi surrounded by rocks in the northern part. The passage, 2 cables wide, into Port Kalloni is at the eastern end of the bay, and between the shoals extending from the points on either side there are from 10 to 15 fathoms water. The port is frequented by coasters, and a small steamer from Smyrna calls twice a week. It is subject to heavy squalls from the high land surrounding it.

Anchorage may be obtained in Apothero bay, about 2 cables northward of Erimo-nisi; here there is a village, with a small boat pier and Custom-house.

Supplies.—Good beef and vegetables at moderate rates can be obtained; but no bread.

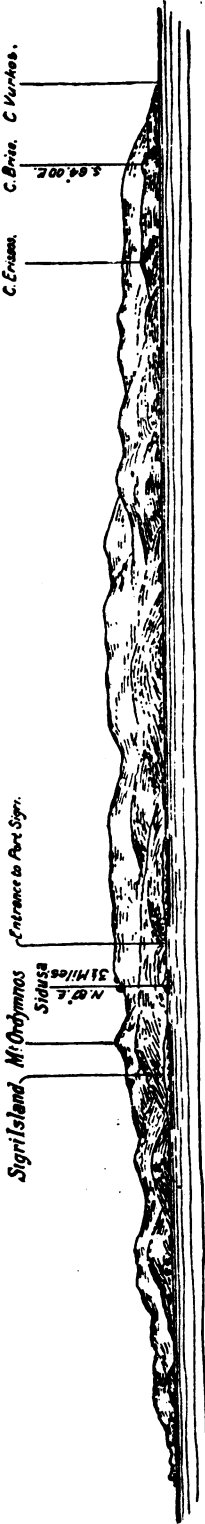
Chart 1,665,

Coast.—From Port Kalloni, the coast trends westward $5\frac{3}{4}$ miles to Cape Brisa, a prominent cliffy point with shallow ground around, and a rock above water off it; at half a mile eastward of the cape, is a bank of sunken rocks nearly a quarter of a mile from the shore. These dangers are steep-to, and the cape should be given a wide berth. From Cape Brisa, the coast trends north-westward $7\frac{3}{4}$ miles to Cape Sigri, the western extreme of Mityleni; it is throughout irregular, cliffy with some beaches, backed by high land, and has deep water at a quarter of a mile off.

Lat. 39° 11' N.
Long. 25° 50' E.

Cape Sigri is a steep irregular cliffy projection, 200 feet high, and conspicuous from the southward by its abrupt termination, but from the westward it becomes blended with the high land, and is not then readily distinguished, but the cliffs of Sigri island showing white, form a good mark; the little islet of Sidusa, 180 feet high, is also remarkable

MITYLENI. W. COAST



MITYLENI. SOUTH COAST



Chart, 1,665.
Var. 4° W.

from its conical form. Cape Sigri itself has been undermined by the sea, and the débris from the cliff falling seaward has formed a rocky ledge. Off the cape, is a rock, 8 feet high, joined to the shore by a ledge just covered. Mount Ordymnos, 1,780 feet high, on the summit of which is a monastery, is a good distant mark; from the southward, the mount has a peaked appearance, which disappears when seen from the northward. From the N.N.E., the western side of Mityleni appears to slope gradually down to the water's edge, and the lighthouse on Sigri island, when visible, is a conspicuous object at a good distance.

Temporary anchorages.—During strong north-easterly winds, vessels will find anchorage off a sandy beach at about $2\frac{1}{2}$ miles south-eastward from Cape Sigri, in about 14 fathoms, but no farther out; at three-quarters of a cable outside this depth, there will be 20 fathoms. Fresh water can be obtained from a small river at the east end of the beach. There is also good anchorage in from 10 to 7 fathoms water, in Brisa bay, about 6 miles south-eastward from Cape Sigri; it will be known by a fine beach having a little islet off its eastern end, and a valley with several olive groves, and a few houses. This is the best anchorage in the vicinity, but vessels at anchor in either of these bays should leave immediately a gale abates.

Plan, 1,671.

Sigri island, one mile northward of the cape of this name, is $1\frac{1}{2}$ miles in length north and south, a quarter of a mile wide and 200 feet high at 6 cables from the south end. Its sea face is cliffy, irregular, and bordered by shallow water and rocks, which extend off about $1\frac{1}{2}$ cables; and at $3\frac{1}{2}$ cables northward of the lighthouse and 2 cables from the shore, is a 5-fathoms patch.

LIGHT.—A *white flashing light every half minute* is shown at an elevation of 180 feet from a white iron tower 65 feet high on the west extreme of Sigri island; it should be visible in clear weather from a distance of 20 miles, but within 10 miles the eclipses are not total, and it is obscured from seaward by the land from the bearing of N. 3° W., through west, to S. 31° W., and also on certain bearings within the port.

Sidusa islet.—Fronting the entrance to Port Sigri and about three-quarters of a mile from the southern end of Sigri island, is Sidusa, a conical islet, 180 feet high, 2 cables in extent, and surrounded by rocks above and below water.

Ledges.—A rocky ledge extends from Sidusa islet 3 cables northward, on the outer end of which is a rock 2 feet high; another ledge with large rocks 5 to 10 feet high on it, projects about the same distance south-eastward; the extreme of the shoal is clearly visible.

Between the 5-fathoms lines surrounding Cape Sigri and Sidusa islet, the passage is 4 cables wide. Between Sidusa islet and Sigri island, the width of the channel between the same contour lines is $4\frac{1}{2}$ cables.

Lat. 39° 12' N.
Long. 25° 51' E.

PORT SIGRI.—Sigri island forms together with a bay in the coast a convenient and spacious port with from 15 to 7 fathoms water, mud, or mud and weed; the northern end of Sigri island is less than 2 cables from the cliffs of the coast, and between the shoals extending from either side, is a narrow passage carrying $2\frac{1}{2}$ fathoms water into the port. The shore on the Mityleni side of the port, is bordered by shallow water, and on a projecting point of the coast is the village and fort of Sigri. The anchorage is with the fort bearing about E.S.E. in 12 to 14 fathoms, or farther northward in 7 to 9 fathoms, sheltered from nearly all winds. The bottom is reported to be good holding

ground, but vessels with light anchors are liable to drag unless in muddy bottom. Plan, 1,671.
Var. 4° W.

The port is a place of refuge for vessels bound to or from Constantinople with contrary winds. During the warm season, there is nearly always a fresh north-easterly wind, rendering the climate most enjoyable.

The village of Sigri consists of a cluster of small houses and a mosque. The streets are irregular and paved with cobbles. The inhabitants are all Mohammedans, but the majority speak Greek. There is a small stone pier near the fort.

Phanæ islet.—A small islet surrounded by shoal water, named Phanæ, 30 feet high, lies close to the shore at the eastern side of entrance with about 10 feet water between it and Mityleni.

Caution.—The soundings in the Survey from which the chart of port Sigri is taken, not being in sufficient detail, caution must be used in approaching its shores.

Directions.—During strong adverse winds, shelter will be found in port Sigri, and a steam vessel will have no difficulty in entering either north or south of Sidusa island.

Port Sigri with strong north-easterly winds is difficult of access in a sailing-vessel, but if it is determined to enter, the shoal extending from the south end of Sigri island, and the ledges from Sidusa and Phanæ islets should be avoided. With a moderate breeze, a vessel can work in, and the dangers will probably be recognised by the discoloured water.

Supplies of meat, vegetables, and bread can be obtained, in addition to which, abundance of grapes, figs, melons, &c., are to be had, and the hill sides close to the anchorage swarm with partridges.

Telegraph.—Port Sigri is a telegraph station.

Ordymno point, the north-western extreme of Mityleni, is 6 miles nearly from Sigri island; the coast between, is irregular and the water all along deep, but the salient points should be given a wide berth. Between Ordymno point and the point westward of it, is a bay, in which is the islet of Agios Ioannis. During south-westerly winds, temporary anchorage in 10 or 12 fathoms water will be found in the south-western part of the bay on the east side of Ordymno point. This bay is exposed to north and east winds, and the holding ground is bad; steam-vessels seeking shelter here in cases of actual necessity from a south-westerly gale, should leave directly it moderates or there is the least indication of any change, as the wind may chop round suddenly to the north, and blow with great violence; therefore not a moment should be lost in leaving on the slightest indication of any change. Ordymno point and Agios Ioannis islet are skirted by rocks, and should be given a wide berth. The neighbourhood abounds with game. Chart, 1,665.
Lat. 39° 18' N.
Long. 25° 56' E.

North coast.—From Ordymno point, the northern coast of Mityleni trends eastward about $11\frac{1}{4}$ miles, and then northward 3 miles to Cape Molivo. At about $2\frac{1}{2}$ miles eastward of Ordymno point, and close in-shore, is Meringa rock, above water, and a third of a mile eastward of it is another but larger rock, each with shoal water round. At $1\frac{1}{4}$ miles farther east is Gavatha point with a rocky shoal extending off about 2 cables, and at one mile north-east of the point, and half a mile from the shore, is Gavatha rock above water, near the north end of a shoal, and steep-to. The mountains about one mile within the coast are about 1,200 feet high.

Petras islet.—In the bight where the coast turns to the north and about a mile westward of the little village of Petras, is the islet of

Chart, 1,665.
Var. 4° W.

Petras about one-third of a mile in diameter, and between it and the shore are two rocks above water, the eastern one of which is connected by shoal water to the shore, but between the rocks there are 10 fathoms. A sunken rock lies near the north-west side of Petras islet; with this exception, the water around it is deep. From the village of Petras northward, the shore is skirted by rocks.

Plan on 1,665.

CAPE MOLIVO is a cliffy irregular headland projecting westward, and skirted by rocks.

Lat. 39° 22' N.
Long. 26° 11' E.

Molivo road.—On the south side of the cape is the little town and castle of Molivo, with anchorage off it during easterly winds, in from 10 to 20 fathoms, but the water deepens suddenly.

H.M. ships *Alexandra*, *Achilles*, and *Raleigh* anchored in Molivo road in September, 1879; the *Téméraire* and *Monarch* anchored in the little bay $1\frac{1}{2}$ miles to the southward near Petras village, in 16 fathoms water, with the north point of Petras islet bearing N. 80° W. At that season of the year, the wind generally blows from the northward and eastward, and an unpleasant swell sets into Molivo road.

Supplies.—Refreshments of all descriptions are plentiful, especially vegetables and fruit.

Communication.—Two steamship companies running between Constantinople and Smyrna call here weekly.

Chart, 1,665.

MUSELIM ROCK.—Muselim rock, in the middle of the channel of that name, is awash and is situated $4\frac{1}{2}$ miles N. 58° E. from cape Molivo. A patch with 4 fathoms water on it, lies at one-third of a mile N.W. $\frac{1}{2}$ N. from the rock; and another patch with the same water over it, 4 cables S.E. by E. $\frac{3}{4}$ E. of it. A shoal, on which the depth was not obtained, was reported by the French frigate *Zénobie*, in 1861, to be situated half a mile N. $\frac{1}{2}$ E. from Muselim rock. The existence of this shoal must be considered doubtful. The water is deep all round these dangers, which are easily avoided by keeping one mile or so either from the northern or southern shore.

Cape Skammia.—From Cape Molivo, the coast trends nearly east for 8 miles to Cape Skammia, the northern extreme of Mityleni; it is all along bold, with deep water, except at about 2 miles eastward of the north-east projection of Cape Molivo, where a rocky shoal borders the coast eastward for about a mile. A rock having only 2½ fathoms over it, is situated about one cable north-east of Cape Skammia.

At 2½ miles inland from Cape Skammia, Mount Lepethymnus is 2,752 feet high.

LIGHT.—A *red fixed* light is shown, at an elevation of 66 feet, from a mast over a white house on Cape Skammia; it should be visible in clear weather from a distance of 6 miles.

Cape Tomari is a cliffy headland, 5 miles south-eastward of Cape Skammia; the coast between, falls back and forms a bay $1\frac{1}{2}$ miles deep, in the north-western part of which is the little islet of Monopetra with shoal water round it, steep-to; between the islet and coast of Phero point, there are from 16 to 20 fathoms.

Shoal.—From the southern part of Cape Tomari, a rocky shoal with 2½ fathoms on it, extends eastward one third of a mile.

Tomari islands southward of the cape of that name, consist of a group of four islets and some rocks, extending over a distance of

Lat. 39° 19' N.
Long. 26° 27' E.

1½ miles nearly, north and south. Between the northern islets, and a ledge of rocks above and below water united to the coast, is a narrow passage with 12 fathoms water. Chart, 1,665
Var. 4° W.

North-east coast.—From Cape Tomari, the coast trends south-westerly for 4 miles, and then south-east and southerly about 13 miles to the town of Mityleni, the capital of the island (*see* page 83). The bight formed by the bend of the coast, southward in the Tomari islands, is called Makri bay, and has convenient depths for anchoring.

Reported rock.—A rock is reported to exist, bearing W. ¾ S., distant 9 cables from the south extreme of the southern Aspri island (the southern islet of the Tomari group).

The exact depth over the danger being unknown, it has been marked on the charts as a rock with less than 6 feet water on it.

Lismoni islet (*Erimo Nisi*).—In the southern part of Makri bay, is the little islet of Lismoni, with a reef extending from its south-western side, and 8 to 12 fathoms water between it and the south shore.

At nearly midway between Makri bay and the town of Mityleni, is a small inlet with from 4 to 6 fathoms water, called Mestegna cove; and 1½ miles south-east of the cove is the little islet of Kidonia, united to the shore by a ledge with from 3½ to 5 fathoms on it. There are two other islets or large rocks close to the coast, one north-westward of Mestegna cove, the other between Kidonia islet and the town of Mityleni. The water all along, at half a mile from the shore, is deep.

MITYLENI CHANNEL.—This channel is bounded by the island of Mityleni on the west, and the coast of the mainland on the east. Its general direction is N.N.W., and length 30 miles, with an average breadth of about 8 miles, but between Tomari and Eleos island at the northern part, the distance is only 3½ miles. The navigation is easy, the channel is well lighted, and the only off lying danger is Eleos rock lying about a mile southward of Eleos pulo (*see* page 92).

Coast.—From Cape Mal-tepeh (*see* page 82), the coast of the mainland trends northward 2½ miles to the entrance of South channel to Port Ajano; it is very broken and irregular, but steep-to and clear of danger.

Cane or Ajano islands.—The Cane or Ajano, are two islands united by a bank with from about 2 to 4 feet water on it; the inner of the two which is called Makro nisi, is a mile in length north and south, and forms with the coast of the mainland a narrow passage to Port Ajano, bordered by shoal water on either side, but from 5 to 10 fathoms deep, and called South channel. The shoal water extends nearly three-quarters of a cable southward from the south end of Makro nisi. On the mainland within the entrance, are the ruins of Cane, and hot springs. Plan on 1,878.
Lat. 39° 1' N.
Long. 26° 48' E.

The outer Cane island is nearly three-quarters of a mile in length, and its western shore is clear of danger. At about 6 cables northward of it, and the same distance from the coast, are the Nikolo rocks with shallow water extending a quarter of a mile eastward. The largest rock has a white house upon it.

Shoal.—A 3½ fathoms patch lies E. by N. ¾ N., distant 3 cables from the north extremity of Nikolo rocks.

PORT AJANO is a narrow inlet running in about one mile north-eastward; the inner part is shallow, but in the outer part over a distance of about 4 cables, there are 5 to 6 fathoms water. The

Plan on 1,878.
Var. 4° W.

north channel, between the Cane islands and the Nikolo rocks, about a quarter of a mile wide, is through a narrow passage between the shoals on either side, and only $3\frac{1}{4}$ fathoms deep. The south channel between Makro nisi and the main is described above.

Chart, 1,665.

Kabakum bay.—From Port Ajano, the coast trends round to E.N.E. for 5 miles, and then turns north-westward for about 17 miles to Tuz burnu, the south-western extreme of a hilly peninsula. The southern portion of this coast forms a bight 4 miles deep, called Kabakum bay, with from 20 to 8 fathoms water, mud bottom, and where shelter may be obtained from southerly and easterly winds; the village of Dikili is in the eastern corner of the bay.

LIGHTS.—At about half a mile northward from the village of Dikili, two *white fixed* lights placed *vertically*, are exhibited at an elevation of 59 feet above the sea, and are visible in clear weather from a distance of 10 miles.

Trade.—The principal exports are barley, valonea, beans, peas, wheat, and raisins, and were valued in 1905 at 100,000*l.*; the principal imports are sugar, cattle, flour, rice, salt fish, and sacks, and were valued in the same year at 43,500*l.*

Shipping.—In 1905, 96 steam vessels of 64,950 tons, and 935 sailing vessels of 19,878 tons entered the port of Dikili; of these 7 steam vessels of 18,500 tons were British.

Communication.—The Pantaleon and Mahsûse Company's steamers between Smyrna and Constantinople, call at Dikili, fortnightly. Dikili is also a telegraph station.

Suna bay (*Tatli Su*) at the northern end of the coast just mentioned, affords shelter from all northerly and easterly winds, in from about 18 to 8 fathoms, mud. In the southern part of Suna bay, a sandy tongue called Suna point projects upwards of one mile north-westward, forming on its northern side the bay of Ayasmata, with 4 fathoms water at the entrance, but shallow within. At the head of the bay, is the Dogana or Custom-house.

The eastern shore of Suna bay and the coast southward of it are bordered by shallow water, which, south of Suna point, shoals off $1\frac{1}{2}$ miles.

Telegraph cable.—Near Aspro point in Suna bay, is landed a cable from the town of Mityleni, which affords connection between the latter and the town of Aivali; vessels should avoid anchoring near it.

Plan, 1,672.

MOSKO ISLANDS.—This group consists of about twenty islands, islets, and rocks, all of them most irregular in shape, with numerous sunken dangers, extending over an area of about 8 miles north and south, by $9\frac{1}{2}$ miles east and west. Mosko islands lie northward of Tuz burnu, and bound the eastern side of the northern part of Mityleni channel.

Lat. 39° 19' N.
Long. 26° 33' W.

Eleos island, which with Eleos pulo, are the westernmost of the Mosko islands, is about half a mile in diameter, and surrounded by shoal water, which at its north-western point extends off nearly $1\frac{1}{2}$ cables. Close-to, on its south-western side, is Eleos pulo, a cliffy islet a quarter of a mile in length, with rocks extending a cable south-westward. These and the Tomari islands to the westward, as already stated, form the narrowest part of Mityleni channel, the distance across being $3\frac{1}{2}$ miles.

Chart, No. 2,836b.

LIGHT.—A *white fixed* light is shown at an elevation of 197 feet from a white stone tower on the summit of Eleos island; it should be visible in clear weather from a distance of 14 miles Plan, 1,672.
Var. 4° W.

Eleos rock.—This danger with $2\frac{1}{2}$ fathoms water on it, is situated $1\frac{3}{10}$ miles S. $\frac{3}{4}$ W. from Eleos island lighthouse, and rises from a rocky bank 2 cables in extent north and south, with from 3 to 5 fathoms on, and 6 to 15 fathoms around it. When in the vicinity of the rock, Eleos lighthouse should not be brought to bear between North and N. by E. $\frac{1}{2}$ E. (See view 2, on chart, No. 1,672.)

GYMNO ISLAND in the form of a boot with its toe to the south-west, is $1\frac{1}{2}$ miles in length, $1\frac{1}{4}$ miles in greatest breadth, and 175 feet high. Shoal water extends from 2 to 3 cables off its shores excepting at Ali burnu, where it is moderately steep-to.

LIGHTS.—Two *red fixed* lights placed vertically are exhibited at an elevation of 65 feet on Ali burnu, the south-eastern extreme of Gymno island; they should be visible in clear weather from a distance of 6 miles. Lat. 39° 17' N.
Long. 26° 37' E.

Anchorage.—Ali burnu is separated from the shore of Tuz burnu, by a passage nearly 4 cables wide, but which is narrowed to half that distance by shoal water on either side, leaving in mid-channel a depth of 9 fathoms, leading into a roomy and well sheltered anchorage with 15 to 17 fathoms water, soft mud bottom, between Gymno island and the coast. The anchorage, which has occasionally been used by the British squadron, extends as far north as Rowley point, but there it is more exposed; it is commonly called Mosko nisi anchorage.

Caution.—The shoal water from the shore northward of Tuz burnu is reported to have extended more into the channel than was formerly supposed. It is therefore necessary when passing between this point and Gymno island, to keep nearer the island than the mainland.

Current.—A current generally sets strongly through the passage to the northward.

Tuz burnu is precipitous, and of a whitish colour, the only cliffs in the vicinity presenting such an appearance.

Water.—Opposite Gymno, on the margin of the beach, in the hollows between the hills, fresh water may be obtained by sinking wells 3 or 4 feet deep. During the winter season, the ground, owing to the rain, is everywhere full of springs, but in dry weather there would be difficulty in procuring a large supply of water, as there are no permanent springs in the vicinity of the anchorage.

CALEDONIA SHOAL.—This shoal within the depth of 5 fathoms, is about a quarter of a mile in length north and south, and has from 2 to 4 fathoms water on it, and 10 to 14 fathoms around it. The shoalest part lies nearly 7 cables north from the north point of Gymno island. (See view 1, on chart, No. 1,672.)

Mosko island (or the Fragrant isle).—This irregularly-formed island extends about $4\frac{1}{2}$ miles north and south, and $3\frac{1}{2}$ miles east and west, and is separated from the northern extreme of Tuz burnu peninsula by a distance of about $1\frac{1}{2}$ cables, and across the shallow flat (which till recently joined them), has been dredged a channel, which will be alluded to later on, in the description of Aivali bay. It may be said to be divided into two portions; the southern part is the larger, and in the centre, is 623 feet high, with a projection to the eastward covering Aivali bay.

Plan, 1,672.
Var. 4° W.

The northern part of Mosko island is comparatively narrow, running east and west, with a hill at each end, that on the west being 487 feet high. The two portions of the island are united by a narrow neck of land, being in one place only about 2 cables across, and $1\frac{1}{2}$ miles in length. The shore all round the island is contorted, and bordered by shallow water and rocks.

To the eastward of Mosko island are several islets, rocks, and shoals with deep water between them, through which the eye and chart must be the guide.

Lat. 39° 20' N.
Long. 26° 38' E.

Mosko road.—On the western side of Mosko island, is Mosko pulo close-to, with a narrow boat-passage between them. The bight formed by the southern coasts of the two islands, is called Mosko road, where there is limited anchorage in 11 to 13 fathoms, mud bottom, but open to the south-west.

Shoal.—In addition to the spits extending from the south coast of Mosko island to a distance of 3 to 4 cables, an isolated shoal with 3 fathoms on it, lies S. $\frac{1}{2}$ W. 6 cables from the south-east extremity of Mosko pulo.

At about 6 cables westward of Mosko pulo, is Kalamo islet, and partly covering the space between the two, on the north, is Leiah islet, the three islets forming another anchorage, with 8 to 11 fathoms, mud.

Kalamo pulo, with shoal water extending from it to the south-eastward lies half a mile westward of Kalamo; the water is deep between these two islets, excepting that $1\frac{3}{4}$ cables westward of the south-west extremity of Kalamo, there is a rock above water, and others covered, close around it. Between Kalamo pulo, and Eleos island before alluded to, the passage in mid-channel is clear and deep.

Lat. 39° 19' N.
Long. 26° 42' E.

AIVALI BAY.—This landlocked sheet of water extends 4 miles in a north-east and south-west direction with a most irregular outline, its extreme breadth being $1\frac{1}{2}$ miles. The depth in the central part over a level bottom is 6 fathoms, which decreases towards the extremes.

The bay is covered on the north by Mosko and Krommido islands, and the latter is joined to the mainland by a causeway through the shallow water.

Towns.—On its eastern shore is the town of Aivali, containing a population of about 60,000 inhabitants, nearly all of whom are Christians. The town possesses several olive oil mills, including one for its production from olive stones; it also has several soap factories and tanyards. The town of Mosko, with a population of about 8,000, is on Mosko island in the north-west corner of the bay.

Taliani pass.—The west entrance to Aivali bay, called Taliani pass, is between Mosko island and the north extremity of Tuz burnu peninsula. The artificial channel, with a depth of 16 feet, is nearly a mile in length and 40 yards broad, the bottom being partly rock and partly sand.

The Mosko island side of the channel is marked by buoys and beacons coloured red; the south side by buoys and beacons coloured white.

LIGHTS.—A *white fixed* light is exhibited from the western beacon, which stands insulated on the edge of the shoal extending from the south shore of Mosko island. The remainder of the channel is illuminated by six *red* lights, arranged in pairs, three *red* lights on each side of the cutting.

Tidal stream.—There is a perceptible tidal stream running through this channel, and there appears to be a rise and fall of about 2 feet in Aivali bay.

Directions.—If taking this channel, approach the outer pair of buoys on a N. 66° E. bearing. Plan. 1,672
Var. 4° W.

North entrance.—The north entrance between Mosko and Krommido islands, is a narrow channel, with a least depth of 2 fathoms, and marked by three beacons and four buoys. The outer beacon is placed on the small islet on the north side of the entrance, the two inner beacons are placed on either side of nearly the narrowest part of the channel, and just within two piers that extend a short distance from each island. Two buoys are moored near the outer entrance, and two near the inner entrance. The fairway lies between the buoys and between the two inner beacons.

Anchorage.—The anchorage of Aivali on the east side of the bay is good, there being deep water and good holding ground close to the town.

Consul.—There is a British Vice-Consul at the town of Aivali.

Communication.—Aivali is in telegraphic connection with the rest of the civilized world. Steamers run frequently to Smyrna, Mityleni, and Constantinople, and weekly to Lemnos, Dédé Agatch, and Saloniki.

Trade.—The exports, which consist principally of oil, soap, hides and flour, were valued in 1905 at over 180,000/.: and the imports consisting of raw hides, wheat, sugar, &c., at over 140,000/.

Shipping.—In 1905, 474 steam-vessels of 93,479 tons, and 1,592 sailing-vessels of 17,026 tons entered the port of Aivali.

Water is reported good, and provisions plentiful at Aivali.

Pyrgo is an irregularly-shaped island about $1\frac{3}{4}$ miles in length north and south, with a tower on its summit 295 feet above the sea; it is nearly united about the middle of the east coast, to the west extreme of the northern part of Mosko island, the two forming a deep bay open to the south, with several shoal patches. Lat. 39° 23' N.
Long. 36° 26' E.

Mosko island, N.E. anchorages.—During strong winds from east-north-east, anchorage will be found under the lee of Kudhu island, in from 6 to 9 fathoms, soft bottom. This island bears S.E. $\frac{3}{4}$ S., and is distant $1\frac{1}{2}$ miles from Mavromati point, the north-east extremity of Mosko island. The anchorage north-eastward of the town of Mosko, is in from 10 to 15 fathoms, but exposed to the E.N.E., which is the worst wind at this anchorage, blowing down the Gulf of Adramyti. Merchant vessels visit the anchorage for oil.

Of the other Mosko islands and dangers, it is useless to give a more detailed description, and the navigator is therefore referred to the Admiralty chart, No. 1,672, and views thereon.

GULF OF ADRAMYTI.—This gulf in continuation of the Muselim channel (*see* page 96) is upwards of 20 miles long, and between the Mosko islands and the shore north of them, about 8 miles wide. The coast on the north is closely backed by high mountainous land, and between 8 and 9 miles in from the head of the gulf, Mount Ida attains an elevation of 5,750 feet above the sea. The land on the south side of the gulf is hilly, with chains of mountains in the interior, and 12 miles from the sea, is Mount Sailejik, 4,010 feet high, whilst the land at the head of the gulf is an extensive, rich, and well-cultivated plain. Chart, 1,665.

Cape Kara tepéh (ancient *Pyrrha prom.*), on the south side of the gulf, and about $6\frac{1}{2}$ miles east-north-east from Mosko island, is a

Chart, 1,665.
Var. 4° W.

bold rounded headland, and like Dahlina point $3\frac{1}{2}$ miles farther on, may be rounded at a short distance; the coast between the two points forms a bight $1\frac{1}{2}$ miles deep.

Coast.—From Dahlina point, the coast in front of a ridge which culminates in a hill 595 feet high, trends eastward 3 miles, and then a low shore continues northward and round westward, forming the head of the gulf. The bend in the coast to the south-east, is called Kemer bay from the village of the same name $2\frac{1}{4}$ miles inland to the eastward. A river runs into the bay, and on the south shore is the Custom-house.

Axia bay is in the north-east corner of the gulf, and vessels may anchor off the village in any convenient depth in from 17 to 7 fathoms, mud; the latter depth will be about half a mile from the shore. The town of Adramyti (ancient *Adramyttium*), from which the gulf takes its name, stands about 5 miles to the eastward.

Communication.—Steamers of the Pantaleon and Mahsûse Companies call at Axia bay fortnightly from Constantinople and Smyrna. The town of Adramyti is a telegraph station.

Water.—Several streams run into the sea near the village, and a plentiful supply of good water may usually be obtained.*

Supplies.—Oxen, sheep, poultry, vegetables, &c., can be procured from the neighbourhood and town of Adramyti.

Ilija bay is 2 miles westward of Axia bay, and here, there is anchorage in 9 fathoms, muddy bottom, about half a mile from the shore, or farther out if necessary.

Water.—Good water can be procured in any quantity from a clear running stream. Boats can go either side of the entrance, and hoses of 30 or 40 fathoms in length will lead into them. At one cable from the river there are 5 fathoms water, so that vessels coming here expressly for water, may anchor as near as convenient.

Coast.—Following Ilija bay to the south-west, is a low point, and at $1\frac{1}{2}$ miles beyond it, is Kara point, low, salient, and steep-to; between the two points, a little river runs into the sea. The coast thence for several miles is thickly wooded with olive trees, and farther westward are scattered town and villages, backed by high land; it is all along clear of danger (excepting a shallow patch bordering the shore close in, here and there) for 22 miles to Katagar, a projecting point on the north side of Muselim channel.

MUSELIM CHANNEL is the name given to the channel separating the north coast of Mityleni island from the mainland, and leading to the Gulf of Adramyti and Mityleni channel. The southern shore of Muselim channel may be said to be comprised between Capes Molivo and Skammia, described on page 90. The north shore consists of the coast between Katagar point and Cape Baba. The least width of the channel is $4\frac{3}{4}$ miles, and with the exception of the dangerous Muselim rock and patches (described on page 90), and the shoals eastward of Sivriji point now to be mentioned, it has no outlying dangers.

At 2 miles westward of Katagar point, is another point, less salient, with a shoal extending about $1\frac{1}{2}$ cables from it; between the two points, is a bay with the remains of an ancient mole, and a little inland is the village of Behram and the ruins of ancient *Assos*.

Chart, No. 2,836b.

* No water could be obtained at this season, the stream being dry.—Lieutenant E. L. Lang, H.M.S. *Scout*, 30th August, 1888.

Sivriji point is 6 miles westward from Katagar point, and will be known by the white lighthouse on it. Chart, 1,665.
Lat. 39° 28' N.
Long. 26° 15' E.
Var. 4° W.

The shore for upwards of one mile north-eastward of Sivriji point is foul, and shallow water with patches of 3 and 4 fathoms, extend off nearly a mile, the outer patch of 3 fathoms bearing E. by S. distant nearly one mile from the lighthouse, and falling down suddenly to deep water.

LIGHT.—A *white fixed* light is shown at an elevation of 66 feet above the sea, from a mast over a white house on Sivriji point; it should be visible in clear weather from a distance of 10 miles.

Sivriji bay, westward of the lighthouse, is upwards of a mile wide at the entrance, and nearly two-thirds of a mile deep, with from 17 to 9 fathoms water, which gradually shoals. An ancient mole appearing like a reef, runs off from the eastern side of the bay. When entering the bay from the eastward or leaving it for that quarter, the shoals eastward of Sivriji point should be given a wide berth, and the lighthouse kept bearing northward of N.W.

Muselim rock bears from the lighthouse, South nearly, distant $2\frac{3}{4}$ miles (*see* page 89).

CAPE BABA.—This headland (ancient *Lectum prom.*) is high and bold, the termination of mountainous land, which at less than $2\frac{1}{2}$ miles within, rises 1,665 feet above the sea, a rather less elevation than Mount Ordymnos of Mityleni. Coming from the northward, and when abreast of the cape, it appears to descend almost perpendicularly to the sea, though on opening Lodos point to the eastward which slopes gradually and is not nearly as high, this appearance is lost. The cape is $7\frac{1}{2}$ miles westward of Sivriji bay, and between, excepting the narrow shoals bordering the shore, the water is all along deep. On the cape, is a village and castle, and thence the coast trends north-north-eastward 7 miles to the River Tuzla.

An extensive shoal borders the shore in the vicinity of the river, extending off three-quarters of a mile, and falling suddenly to deep water. This latter part of the coast should be given a wide berth.

[For continuation of the coast northward *see* page 107.]

SPITFIRE BANKS.—These banks with less than 100 fathoms of water are two in number, and are situated to the westward of Mityleni in the middle of the passage from the Doro channel to the Dardanelles. The northern bank, 19 miles long in a N.E. and S.W. direction by 4 miles wide, has two heads, Johnston bank with 21 fathoms of water, mud, in lat. 39° 19' N., long. 25° 23' E., and Mansell bank with 50 fathoms of water in lat. 39° 13' N., long. 25° 17' E. The southern bank, roughly circular, and 15 miles in diameter, also has two heads, Stokes bank, with 45 fathoms of water in lat. 38° 53' N., long. 25° 26' E., and Brooker bank with 50 fathoms of water in lat. 38° 52' N., long. 25° 20' E. These banks consist of sand, shells and coral, and are surrounded by depths of from 100 to 300 fathoms with a clay bottom. Chart, 2,836b.

STRATI ISLAND.—This island (ancient *Næa*) is triangular in shape with its sharp end to the southward; it is six miles in extent north and south, about $3\frac{1}{2}$ miles in greatest breadth, and 973 feet high. On its west side, about $1\frac{1}{2}$ miles from its northern end, is a little bay, and a village named St. Strati. The population of the island is about 1,000. Plan on 1,891.
Lat. 39° 32' N.
Long. 24° 59' E.
Var. 4° 30' W.

Rubos islet.—North-eastward, 4 cables from Cape Thascoli, the eastern point of the island, is a small rocky islet named Rubos, with

Plan on 1,891.
Var. 4° 30' W.

shoal water extending one-third of a mile from it. Between the sunken rocks on either side of the passage inside the islet, there are $4\frac{1}{2}$ fathoms water.

St. Apostoli islet.—A small islet named St. Apostoli, lies 2 cables off Cape Kalamaki, the northern extreme of the island, to which it is connected by a reef; 2 cables from the islet there are 25 fathoms water; elsewhere shoal water in no case extends more than 2 cables off shore. Strati island is about 16 miles from the nearest part of Lemnos island.

Chart, No. 1,659

LEMNOS.—This island, called by the Turks Stalimeni, in the middle of the northern part of the *Ægean* sea between the base of Mount Athos and the island of Tenedos, is an irregular quadrilateral, about 15 miles each way, and nearly divided into two parts by the bay of Purnea on the north, and that of Mudros on the south. The island is hilly, but of no great elevation. Mount Skopia at the north-western extreme, is 1,410 feet high, Mount Therma in the south-western part, 1,130 feet, and Mount Phako on the south coast, 1,106 feet high.

Productions, population, &c.—The hills are rugged and of barren appearance, and the soil for the most part, thin and sandy; in some places, particularly in the west and south, corn, oil, wine, fruit, and a small quantity of cotton are produced, and a few cotton stuffs are manufactured. Grain and wine are the only exports. The population of the island is about 27,000, mostly Greeks, many of whom are employed in fishing. Kastro, the principal town, and where the governor resides, is on the west coast (*see* page 104).

Communication.—By three lines of steamers frequent connection is kept up with Saloniki, Constantinople, and Smyrna. Kastro is also a telegraph station.

Lat. 39° 47' N.
Long. 25° 21' E.

Cape Irene, the south-eastern extreme of Lemnos, and much lower than the land within it, is bold and salient, and its south side may be approached to the distance of a quarter of a mile.

Plan, 1,661.

Cape Valanidhi, $2\frac{1}{2}$ miles westward, is lower, with a reef running off its 4 cables, which should be given a wide berth in passing, though it may generally be known by the colour of the water; Phako point, W. by N. $\frac{1}{2}$ N., well open southward of Kastro island, leads clear of it.

MUDROS BAY, is the name given to the outer portion of an extensive inlet on the south side of Lemnos island, trending 4 miles in a north-north-west direction, and then the same distance north-easterly; the latter portion being known as Port Mudros (Porto San Antonio) to be presently described. The entrance points to the bay may be considered as Cape Valanidhi on the east, and Kombi point on the west, distant from each other nearly 3 miles. With the exception of Cape Valanidhi reef, and a fringe of shoal water extending from one to 2 cables from each shore, the bay is free from outlying dangers as far as the line joining Buđa and Vrulidhi points, but inside the 3 fathoms line there are many rocks which are dangerous to boats. It has from 24 to 13 fathoms water, mud bottom, and though open to the south-east, is an excellent summer anchorage for any number of large ships, and is reported to be safe in winter.

Caution.—The eastern side of Mudros bay southward of Cape Malathria is extended from an old and imperfect Survey.

Kombi point, the western point of entrance to the bay, is a small rocky peninsula surmounted by Dawkins hill, 282 feet high, being the end of a long ridge from Mount Phako

The west coast, between Limni and Vrulidhi points, is deeply indented by Tarrant and Fuller coves. Limni point is easily discernible, being of a reddish colour, with a white patch near the extreme. Plan, 1,661.
Var. 4° 30' W.

Kombi island, 177 feet high, is connected with Kombi point by a rocky ledge, shoal water extending upwards of 3 cables to northward of the connecting reef, and $1\frac{1}{2}$ cables north-eastward of the island.

Kastra island, a cable to the southward of Kombi island, is a cliffy island about 140 feet high; it should be given a berth of at least a quarter of a mile. There is a narrow boat passage between it and Kombi island.

PORT MUDROS.—The entrance points to this spacious and well-sheltered harbour may be considered as Buda point on the east and Vrulidhi point on the west, distant from each other $1\frac{3}{4}$ miles.

Shoal.—In addition to the flat extending from Vrulidhi point, an isolated patch with $2\frac{1}{2}$ fathoms on it, lies E. $\frac{1}{2}$ N. 3 cables from the north extremity of that point.

Vrulidhi bay, westward of the point of that name, extends in a south-westerly direction three-quarters of a mile with a breadth of 4 cables. Anchorage may be had in this bay in 8 fathoms, with Vrulidhi point bearing E.S.E. distant 3 cables, but the width of the entrance is contracted to a little over a cable between the 3-fathoms lines on each side. On the west side of this bay are three houses, the southern of which is built of white stone, and conspicuous.

Buda point.—The promontory forming the east entrance point to Port Mudros, has three salient points named Buda, Sangrada, and Meganoros. Buda is the southern one of these, having a depth of 5 fathoms half a cable off. The point is about 30 feet high, and composed of low white cliffs. Lat. 39° 50' N.
Long. 25° 14' E.

Sangrada point is $3\frac{1}{2}$ cables northward of Buda point, the coast between forming an indentation $1\frac{1}{2}$ cables deep, most of which, however, dries at low water. Depths under 5 fathoms, will be found three quarters of a cable from Sangrada point. The 5-fathoms line, however, between these points, extends into the channel, there being not more than that depth 2 cables from Sangrada in line with Meganoros point.

Meganoros point, the northern of the three, has a hill 115 feet high, $1\frac{1}{2}$ cables at the back of it, and a little rock 2 feet high close outside it. The coast between it and Sangrada point takes a slight inward curve, being fronted by an extensive bank with from $1\frac{1}{2}$ to 3 fathoms on it, reaching off $1\frac{1}{2}$ cables from Meganoros point. In addition to this, a spit with less than 6 feet water on it, extends W. by S. $1\frac{1}{2}$ cables from the point. Lat. 39° 51' N.
Long. 25° 15' E.

Black rocks.—The middle and largest of these is 10 feet high, and the group divides East and Middle passes. On the south side, the 5-fathoms line approaches to three-quarters of a cable of the largest rock, otherwise they are surrounded by a shallow bank, which, 3 cables N.N.E. $\frac{3}{4}$ E. from the largest rock, has only 6 feet water on it.

The bank under the depth of 5 fathoms, extends $1\frac{1}{4}$ cables in a south-south-easterly direction from the cluster forming the eastern Black rock. Not more than that depth will be found $1\frac{3}{4}$ cables south-westward from the western Black rock.

East pass.—The channel eastward of Black rocks is named East pass, the least breadth of which between the 5-fathoms lines on either side, is a little under 2 cables, and depth 12 fathoms. The leading-mark through this channel (to be again alluded to) is Talikna point

Plan, 1,661.
Var. 4° 30' W

midway between the two mills near Talikna village, and just open eastward of the near summit, bearing N. 32° E. (*see* view A. on plan No. 1,661.)

Under ordinary circumstances, the shoals so far described will be discernible by the discolouration of the water.

Alago island is situated north-westward of Black rocks, and the channel between is named Middle pass. The island is two-thirds of a mile long in a north-east and south-west direction, by $1\frac{1}{2}$ cables in breadth, and 78 feet high. A hut is situated on the ridge, $1\frac{3}{4}$ cables from its north-east end. A small islet 10 feet high lies close to its south-east coast, and 2 cables from the south-west extremity.

Depths under 5 fathoms will be found three-quarters of a cable off this islet, and the same depths at about one cable from the remainder of the south-east coast of Alago island.

The 5-fathoms line surrounds the island at about the latter distance, excepting at the south-western extremity, whence to the western shore of the port not more than 4 fathoms will be found in the channel known as West pass.

Middle pass.—The channel between Alago island and Black rocks, is 2 cables broad between the 5-fathoms lines on each side, with a least depth of 6 fathoms. To lead through the middle of this channel, keep the fifth one from the westward of 10 mills in line with Kaloyeraki point, bearing N. 29° E. (*see* view B. on plan No. 1,661 [876]).

West shore.—From the head of Vrulidhi bay, the west shore of Port Mudros trends in a north-easterly direction with a succession of small points and bays for $2\frac{1}{2}$ miles, and then southward of east, for one mile, to Kaloyeraki point. Until within a quarter of a mile from the extremity of the latter, this shore is fronted by extensive flats, which should be carefully avoided by the lighter draught vessels using West pass, keeping $1\frac{1}{2}$ to 2 cables from the shore of Alago island.

Rocks.—The most dangerous part of these flats has near its eastern edge, a reef with less than 6 feet water on it, bearing W. by N. $\frac{3}{4}$ N., distant 3 cables from the south-west end of Alago island, and connected to it by a bar with 4 fathoms over it. Inside this bar, the water again deepens to 6 or 7 fathoms.

West pass is the name given to the channel westward of Alago island, the dangers in which have just been described, but having no leading-mark, cannot be recommended to those without local knowledge.

Kaloyeraki point, 62 feet high, is the eastern extremity of a narrow peninsula nearly 2 miles long. It is fairly steep to on its south side, but a shoal with less than 3 fathoms on it, makes off nearly 2 cables north-eastward, and two-thirds of a mile in the same direction before the depth of 5 fathoms is reached.

Nikolo patches, with 3 fathoms water on them, are two isolated spots on this bank, bearing respectively N.E., $5\frac{3}{4}$ cables, and N.E. $\frac{3}{4}$ E., $4\frac{1}{2}$ cables from the east extremity of Kaloyeraki point.

A small bank of coral and shells with a depth of $5\frac{3}{4}$ fathoms over it is situated 9 cables N.E. $\frac{1}{2}$ N. from Sangrada point, or about $1\frac{1}{4}$ cables to the eastward of the leading-mark for the East pass.

Kaloyeri rock is a dangerous isolated rock, with 15 feet water over it, bearing S.E. $3\frac{1}{4}$ cables from Kaloyeraki point. The first peak or rise in the land within the Isthmus of Kombi, in line with Sangrada

Lat. 39° 52' N.
Long. 25° 14' E.

point, S. 15° W., leads three-quarters of a cable south-east of it, and close eastward of Nikolo patches, in 4 fathoms of water. Plan, 1,661.
Var. 4° 30' W

Cameron shoal.—Between Kaloyeraki point, and Cape Pavlos on the opposite side of the port, lies a triangular-shaped rocky bank, the sides of which are about $1\frac{1}{2}$ cables long, the least depth of $4\frac{1}{2}$ fathoms being situated near the north-west corner, and bearing East, distant three-quarters of a mile from Kaloyeraki point; an isolated patch of 5 fathoms lies nearly one cable nearer to the latter. Another small spot, with the same depth over it, lies two-thirds of a cable southward of the south end of Cameron shoal, bearing E. by S. $8\frac{1}{4}$ cables from Kaloyeraki point.

Bailey shoal, with $4\frac{3}{4}$ fathoms on it, lies N.E. by E. $\frac{1}{4}$ E., $9\frac{2}{3}$ cables from Kaloyeraki point.

St. Nikolo islet, 20 feet above the water, is situated $3\frac{1}{2}$ cables northward from Kaloyeraki point; it is on a reef, on which at $1\frac{1}{4}$ cables east-south-eastward, is a small rock, 10 feet high, called Anvil rock. Lat. 39° 52' N.
Long. 25° 14' E.

Turk islet, with a hut upon it, and 20 feet high, lies nearly a quarter of a mile west of St. Nikolo islet, and joined to the north side of the peninsula by a dry reef.

North shore.—From the head of the long shallow bay running in north of Kaloyeraki peninsula, the north shore of port Mudros, trends with a series of slight points and bights, in a north-east by east direction $2\frac{1}{2}$ miles to a projection forming the eastern entrance point of a stream, and close south of which, is an islet 3 feet high. The depth of 3 fathoms will be found at about a cable from this islet.

From hence, the low shore turns and runs eastward $1\frac{1}{2}$ miles, backed by cultivated marsh land watered by several streams, and fronted by shallow water, not more than $3\frac{1}{2}$ fathoms being found at an average distance of a third of a mile. The shore now turns abruptly to the south for one-third of a mile to Talikna point.

Villages.—A quarter of a mile from the head of the long shallow bay just mentioned, is the village of Portianos, on the northern outskirts of which, is a conspicuous church. Ypsoparago is a third of a mile north-eastward of Portianos and nearer the shore. Sarpi is three-quarters of a mile westward of the stream just mentioned, and a third of a mile from the shore. A coast road connects these three villages with Talikna and Mudros. On the shore, midway between Ypsoparago and Sarpi, are a landing-pier and chapel.

Talikna town, having a church with a conspicuous white cupola, is situated one-third of a mile northward from this corner of the port; a quarter of a mile south-eastward of the town are two hills, on which are situated two conspicuous windmills serving as part of the leading mark through East pass.

Talikna point, with a rock 2 feet high, three-quarters of a cable northward of it, is important as being part of the leading-mark just mentioned, and is rocky and conspicuous. Here, the shore of the port trends again east-south-eastward for three-quarters of a mile, and then south-westerly $1\frac{1}{3}$ miles to Cape Pavlos. The land of which Talikna point is the termination, attains an elevation of about 210 feet at two-thirds of a mile from the shore, after which, close to the shore, it partakes somewhat of the same cultivated marshy character as that at the head of the port.

Plan, 1,661.
Var. 4° 30' W.

Mount Komi is a conical hill situated about a mile from the shore of the bight formed between Talikna point and Cape Pavlos, and will be mentioned again in connection with the directions for East pass.

Depths.—Roughly speaking, a line joining Talikna point and St. Nikolo islet, marks the limit of the depth of 5 fathoms until within half a mile of the latter, when the soundings increase to 6 to 7 fathoms until a third of a mile westward of that islet.

Three-fathoms patches.—As an exception to the regular and very gradual shoaling of the water northward of this line, two banks with 3 fathoms on them, lie W. $\frac{3}{4}$ S. one mile, and W. by N. $\frac{1}{2}$ N. 8 $\frac{1}{2}$ cables respectively from Talikna point.

Ispatho island 40 feet high, with a building and trees on it, is oval shaped, with a mean diameter of about a quarter of a mile. It is embayed about a third of a mile north-eastward of Cape Pavlos; a reef extends from it westward 1 $\frac{1}{2}$ cables, and depths under 5 fathoms will be found, west-north-westward, one-third of a mile. From the latter position, the edge of the 5-fathoms line runs irregularly in the direction, and to within 2 cables of Talikna point.

Lat. 36° 52' N.
Long. 25° 16' E.

Cape Pavlos, 1 $\frac{1}{4}$ miles north-east of Meganoros point, will be recognised by the village of Mudros a third of a mile back from it, a group of windmills situated upon a hill 80 feet high halfway between, and a chapel near the shore. A bank with less than 6 feet water on it extends 1 $\frac{3}{4}$ cables from the cape, and also from the shore a quarter of a mile south-east of the cape, while off this part of the coast, depths under 5 fathoms extend from 2 $\frac{1}{2}$ to 3 cables. From Cape Pavlos, the shore trends south-south-east for half a mile, and then gradually curves westward to Meganoros point already described. In the south-eastern part of the bay thus formed, are the mouths of several streams.

In the middle of the bay, and also near Meganoros point, the 5-fathoms line approaches the shore to within 2 cables; in other parts, the bank under that depth extends off, a third of a mile.

Pier.—A landing pier for the village of Mudros, is situated 3 cables south-eastward from Cape Pavlos.

Current.—A slight current sets inward along the eastern shore of the port, and outward with a little more strength round Kaloyeraki point.

Anchorage may be taken up in any part of Port Mudros, clear of the dangers and extensive shore-banks already mentioned, the bottom consisting of sand and mud, but the most spacious anchorage, in from 6 to 10 fathoms, will be found inside the triangle formed by Meganoros point, Cape Pavlos, and the North-east extremity of Alago island, taking care to avoid the banks extending from these points, as well as Kaloyeri rock, and Cameron shoal with the detached 5 and 5 $\frac{3}{4}$ fathoms patches southward of it.

DIRECTIONS.—East pass.—Before Limni point bears southward of West, in approaching this, the deepest channel into Port Mudros, bring the largest and central Black rock in line with the summit (62 feet high) of Kaloyeraki point, bearing N. 9° E. Steer for them so, until Talikna point is exactly midway between the two mills (situated south-eastward of the village of Talikna), and just open of the near summit, bearing N. 32° E. (*see view A on plan*). When this leading-mark comes on, the southern extremity of Buda point should be bearing N. 87° E., distant 4 cables, and Meganoros and Sangrada

points should be in line N. 53° E. with Cape Pavlos just open north-west of them. Steer in on the leading-mark, which between Sangrada point and Black rocks, should pass midway between the 5-fathoms lines on either side, until Mount Komi comes in line with the western mill on Cape Pavlos bearing N. 66° E. A vessel may now take up a berth in the bay on this line, or as convenient.

Plan, 1861.
Var. 4° 30' W

Caution.—In proceeding out of the port with the leading-mark astern and therefore not so easy to keep exactly on, it is advisable in the case of a heavy-draught ship, to find, and buoy the end of the spit extending south-eastward from Black rocks.

Middle pass.—When midway between Buda and Limni points, the south-west extremity of Alago island should bear N. by W. $\frac{1}{2}$ W. Steer for it bearing thus, until the fifth from the left of ten mills appears in line with the extremity of Kaloyeraki point bearing N. 29° E. (see view B). When the north-east extremity of Alago island is abeam, or shortly before, taking care to pass northward of Black rocks shallow bank, a vessel may keep to the eastward and anchor as before directed.

As the three conspicuous houses on the west side of Vrulidhi bay, shut in by the south end of Alago island, just clear Black rocks bank, a vessel may begin slowly to turn eastward off the leading-mark, when the houses are lost sight of.

West pass.—As already stated, in the absence of local knowledge, this passage without a leading-mark, is not to be recommended, although by keeping about $1\frac{1}{2}$ cables from the west side of Alago island, a vessel can carry a depth of 4 fathoms.

Lat. 39° 51' N.
Long. 25° 13' E.

Supplies of meat, vegetables, and bread can be obtained.

Water can be obtained from a small stream, $1\frac{1}{2}$ miles eastward of Cape Malathria, on the eastern side of Mudros bay. In the month of August, a fair supply may be procured; a launch can approach within 50 or 60 yards of the beach, and the water can be pumped from a pool about 12 yards inshore, where it is quite fresh; the stream has no apparent outlet. At nearly half a mile southward of the river, a small quantity of water may be obtained from a well, convenient for boats. In the dry season, the other rivers in the bay are either brackish or salt, but afford evidence of having a plentiful supply of water during the rainy season.

In Port Mudros itself, good water may be obtained from a well on the south coast of the Kaloyeraki peninsula, a mile from that point, also from a spring situated near a house, with conspicuous red roof, $1\frac{1}{4}$ miles south-westward from the well.

Coast.—The south coast of the Phako peninsula, from Kombi point to Cape Stavros, trends in a general west-by-north direction $4\frac{1}{2}$ miles; it has some scattered rocks along it, and westward of Phako point (a tongue of land projecting about 2 cables), the rocks and shallow water extend beyond this distance.

Chart, 1,659.

Praso island, half a mile to the north-westward of Cape Stavros, with a deep channel between, is foul and must be given a wide berth.

Port Kondia, westward of Mudros bay, and north of Cape Stavros, is a narrow inlet about a mile deep, with anchorage in from 10 to 7 fathoms, mud, open to the south-west. The inner points are foul, and a mid-channel course should be preserved. The village of Kondia is a little more than half a mile within the head of the port, where the river runs into the sea and there is a custom house.

Plan, 3,428.

Plan, 3,428.
Var. 4° 30' W.

Port Kondia is separated from Mudros bay by an isthmus about a quarter of a mile across, which unites the peninsula of Mount Phako (1,106 feet high) to the main.

The best anchorage is in about 9 fathoms of water, with the Custom house bearing N. 69° E., distant 4½ cables.

Chart, 1,659.

Temporary anchorage.—There is temporary anchorage for small vessels with off-shore winds in the bay next west of Port Kondia, but a solitary rock, one foot high, lies in the middle, and must be avoided

Plan on 1,891.

Cape Tigani.—Mount Stivi at the south-western extreme of Lemnos, is a rugged conical hill 530 feet high; at its base on the south-west, is the small bay of the same name about 2 cables deep, with from 2 fathoms to one fathom water, and open to the south. Cape Tigani is the south extreme of a little islet, with rocks above and below water between it and the shore; the cape bears N.W. by W. ¾ W., and is distant 4½ miles from Cape Stavros; on its eastern side, and in front of Stivi bay, is a rock awash.

Lat. 39° 49' N.
Long. 25° 3' E.

Tigani rock.—At 2 cables S. by W. ¼ W. from Cape Tigani, is the rock of the same name, with 3 feet water on it, 13 fathoms between it and the cape, and 15 fathoms close to its southern side. The rock lies with the western point of Tigani in line with the eastern extreme of Thevates islets. Vessels rounding Cape Tigani should give it a berth of half a mile.

Thevates islets.—The western coast of Lemnos is irregular with one or two little bays and projecting points, backed by elevated hills. At about 1½ miles northward of Cape Tigani, are the two small islets of Thevates, united to each other and to the little promontory of the same name, by shoal rocky ground.

Cape Thevates and the isthmus which joins it to the main, form the western side of Port Plati; the cape is surrounded by rocks, which extend south-east, and eastward into the bay a quarter of a mile.

Port Plati is a nearly circular bay, about half a mile in diameter, with from 9 to 3 fathoms water, mud bottom. The entrance is nearly a quarter of a mile wide, with 10 fathoms water between the shoals on either side. The village of Plati is half a mile inland.

KASTRO.—From Thevates islets, the coast trends north-eastward to two little rocky points which are foul more than a cable off; the northern of these points is 9 cables from Thevates islets, and forms the south entrance point of a bay about a quarter of a mile wide, nearly in the middle of which is a rock with 3 feet water on it. In the north-eastern corner, is a little pier-harbour for vessels of very light draught. On the north side of the bay, is a steep rugged peninsula mass, one-third of a mile in extent, on which is the castle 409 feet high, which being white is conspicuous; on the isthmus and shore north and south of it, is Kastro (ancient *Myrina*) the chief town and seat of government of Lemnos island with a population of about 3,000. When bearing S.E. by S. it appears conspicuous and imposing.

Anchorage.—The best anchorage is in about 10 fathoms, with the northern of two windmills on a hill to south-eastward of the town bearing S. 78° E., and Kastro point N. 12° W.; but the holding ground, sand, is not good, and a vessel must be prepared to proceed to sea directly the wind shifts to the westward.

Telegraph cables.—Lemnos island is in telegraphic communication with the rest of the world by means of two cables landed on

the north side of Kastro, one being laid to Saloniki, the other to Tenedos island; Kastro has a telegraph office, situated near the north-eastern mole. Plan on 1,891.
Var. 4° 30' W.

Shoal.—A $4\frac{1}{4}$ -fathoms patch lies in the entrance to the bay south of Kastro, bearing S. by W. $\frac{1}{4}$ W., distant 3 cables from the western extreme of the peninsula. A conspicuous minaret, near the north-eastern mole, bearing N. 72° E., clears the shoal to the southward.

Coast.—The shore between Kastro, and Cape Petasi about half a mile northward, forms another bay somewhat similar in shape to that south of Kastro, but larger. There is a conspicuous windmill on a small point in the middle of the bay. Kastro peninsula and Cape Petasi are steep-to, but the rest of this bay has depths under 5 fathoms extending 2 cables from its shores. North-east, $1\frac{1}{4}$ miles from Cape Petasi, is Mount Athanasi 1,085 feet high, with a building on it, within half a mile of the shore. Between the base of the mount and Cape Petasi, and half a mile from the latter, are the two detached Skylax rocks above water.

Kastro ledge, a cable in diameter, with 5 fathoms water on it, is a dangerous obstruction for a heavy-draught ship, lying N.W. by W. $\frac{3}{4}$ W., distant 9 cables from the peninsula. There are 20 fathoms water between it and the peninsula. The conspicuous mill on the shore of the bay north of Kastro bearing south of E. by S. clears the ledge to the northward. Lat. 39° 53' N.
Long. 25° 2' E.

Petasi ledge, with 6 fathoms on it, lies N.W. $\frac{1}{2}$ N., a quarter of a mile from Cape Petasi, with deep water between.

Kaloyeri point, $2\frac{3}{4}$ miles northward from Cape Petasi, has a reef extending from it a quarter of a mile in a north-westerly direction, close to which the water is deep. Chart 1,659.

Cape Murtzephlos (*Palæo Kastro*), the north-western extreme of Lemnos, 3 miles farther north, is a conical hill connected to the land within it by a low isthmus; southward of it are some yellow cliffs. Mount Skopia, the greatest elevation in Lemnos, 2 miles eastward of Cape Murtzephlos, is 1,410 feet high, and half a mile from the shore.

Siderites island.—At $4\frac{3}{4}$ miles east-north-eastward from the cape, is the island of Siderites, two-thirds of a mile in average diameter, high, bold all round, and separated from Cape Agrillia by a passage half a mile wide, and deep with the exception of a 3-fathoms shoal near the cape.

Cape Pharaklo, 4 miles farther eastward, is skirted by rocks which extend off more than a cable; the coast between, is broken with cliffs and sandy bays, and the western part is bordered by rocky ground.

PURNEA BAY between Capes Pharaklo and Soteri, which are 6 miles apart, is 5 miles deep. At the head of the bay, is the port of Purnea, and thence the distance across the land to Port Mudros on the south is only about 2 miles, the island being nearly divided into two parts. Plan on 1,891.

Tree point.—The western shore of Purnea bay is composed of small rocky points and coves, and at about halfway in, Tree point, an irregular projection, extends beyond the line of coast more than half a mile, with a reef stretching from it 2 cables. There are anchoring depths, in from about 8 to 16 fathoms, all over the head of the bay, but exposed to the north.

Port Purnea, in the southern part of the bay, is $1\frac{1}{4}$ miles in extent east and west, about two-thirds of a mile north and south, and has in the deepest part 7 fathoms water, sand and mud bottom. It is partly protected from the north by Cape Purnea, a point projecting Lat. 39° 56' N.
Long. 25° 1' E.

Plan on 1,891.
Var. $4^{\circ} 30'$ W.

eastward which covers the shallow water $1\frac{1}{2}$ to 3 fathoms in depth, extending over all the western side of the port. The deeper part, with depths from 4 to 7 fathoms, is exposed to the north, though a 2-fathoms shoal, extending half a mile westward from the eastern entrance point, affords some shelter from the sea. The anchorage space covers an area of about half a mile; the passage into the port is $1\frac{1}{2}$ cables wide, close to Cape Purnea, and between it and the tail of the 2-fathoms shoal from the eastern entrance point.

Port Ekato Kephales on the eastern side of Purnea bay, is very similar to Port Purnea; it has depths of from 7 to 2 fathoms water, but is encumbered midway between the entrance points, by a shoal with 10 feet water, and outside it another with $3\frac{1}{2}$ fathoms. The passage in, is between these shoals and the projecting south-west entrance point.

Chart, 1,659.

Cape Soteri, 251 feet high, the eastern point of Purnea bay, is clifty, and extending from its western extreme, are the remains of an ancient mole. Shallow water extends off nearly 2 cables from the north-eastern face of the cape, and it should not be approached too near. The cape is about $3\frac{1}{2}$ miles westward from Cape Plaka, the north-eastern extreme of Lemnos. Between them is a deep bight, in which shoal water extends about half a mile from the shore.

Lat. $40^{\circ} 2'$ N.
Long. $25^{\circ} 27'$ E.

CAPE PLAKA, the north-eastern extreme of Lemnos, is a steep bold headland, level on the top, and surrounded by a rocky shoal which extends off about one-third of a mile. Half a mile southward of the cape is a steep cliff, and 9 cables south of the latter, is another cliff at the termination of a tongue of land named *Voria Kastro*; the coast between the two cliffs forms a bay. Thence, southward for 2 miles to *Petza* point, the coast declines in height, and is succeeded by a low sandy shore which continues to *Kharos* point, a distance of 5 miles farther. Within the sandy shore, is *Megali Limni*, a shallow salt-water lake with an area of about 2 square miles, and separated from the sea by a narrow strip of land. *Megali Limni* is connected with the sea near its northern end by a short canal, spanned by a bridge.

Kharos point is small, clifty and surrounded by shallow rocky ground, which extends upwards of a mile south-eastward; it forms the northern point of a bay named *Port Kharos*. Between *Port Kharos*, and *Cape Irene*, the south-eastern extreme of Lemnos, are three other bays separated by projecting clifty points. In any of these bays, a vessel will find temporary anchorage during a westerly gale, *Mount Parathis*, 859 feet high, is situated 2 miles within the shore of the central bay; two-thirds of a mile south-east of it, is *Mount Panagia*, 820 feet high, whence the land declines in height to *Cape Irene* (*see* page 98).

KHAROS BANK.—Fronting the northern half of the eastern side of Lemnos, and extending 10 miles from the coast are extensive shallow flats and rocky patches, on many of which there are only from 3 to $1\frac{1}{2}$ fathoms water. The outer of these dangers are named *Anatoli* and *Kinduno* patches, and *Kharos* reef, the whole being known as *Kharos* bank.

From the shore, 2 miles northward of *Kharos* point, a very shallow tongue stretches off in a south-easterly direction $2\frac{1}{2}$ miles, terminating in a reef with less than 6 feet water upon it, bearing E. by N. $\frac{1}{4}$ N. $2\frac{1}{4}$ miles from *Kharos* point.

Kinduno patch, with 4 fathoms on it, lies on the south side of *Kharos* bank and just inside the 10-fathoms line, bearing E. $\frac{1}{2}$ S. distant $4\frac{9}{10}$ miles from *Kharos* point. Between this patch and the

5-fathoms line from the shore, the distance is one mile, and depths from 6 to 7 fathoms. Kinduno patch is also divided from the eastern part of the bank, by a distance of $1\frac{3}{4}$ miles, and depth of 7 to 10 fathoms.

Chart, 1,659.
Var. $4^{\circ} 30'$ W.

Kharos reef with only 9 feet water on it, occupies the western end of a cluster of patches having less than 3 fathoms on them, nearly a mile in extent east and west. This shoal spot bears E. $\frac{1}{4}$ N., and is distant $7\frac{1}{10}$ miles from Kharos point.

Anatoli patches is the name given to two 3-fathom spots at the outer end of Kharos bank. They lie N.N.W. and S.S.E. half a mile distant from each other, the eastern patch bearing E. $\frac{1}{4}$ N. distant $9\frac{1}{2}$ miles from Kharos point. It bears also S.E. $\frac{1}{4}$ S. a little over $8\frac{3}{4}$ miles from Cape Plaka and N.E. $\frac{3}{4}$ E., 14 miles from Cape Irene.

A bank with 6 fathoms on it, lies S.S.E. $1\frac{8}{10}$ miles from the eastern Anatoli patch. Depths under 10 fathoms, extend one mile eastward and north-eastward from Anatoli patches.

Caution.—Kharos bank is generally recognised during day by the colour of the bottom; but it should be given a wide berth, as southward of the bank the current sets northward. (See page 115.)

CAPE ESKI STAMBUL.—From the mouth of the river Tuzla (see page 97) the coast of Anatolia continues northward 10 miles to cape Eski Stambul, and is mostly a sandy beach, behind which the mountains of Kaz and Chigri rise respectively 1,595 and 1,648 feet high. Cape Eski Stambul is a small sand-hill of moderate height, inclining a little to the westward, on which is the village of Talian, erected mostly on the ruins of the ancient town of *Alexandria Troas* (or New Troy), founded by Alexander the Great.

Chart, 1,599.
Lat. $39^{\circ} 46'$ N.
Long. $26^{\circ} 9'$ E.
Var. 4° W.

Numerous antiquities are to be seen to this day, not far to the eastward of this village, of which the most remarkable are the remains of a large theatre, the ruins of a palace, an aqueduct, mineral water baths, and a large outer wall. The port of *Alexandria Troas* is at the present time entirely filled up and separated from the sea by a strip of low land. It was a basin 400 feet in length, by 200 in breadth.

SUFFREN SHOALS.—Cape Eski Stambul is surrounded by a bank of rock and sand, which extends $1\frac{1}{4}$ miles north, and north-westward, and on the outer part of which there are only $2\frac{1}{4}$ fathoms water, and $1\frac{1}{2}$ fathoms about one-third of a mile from the shore. These dangers are named the Suffren shoals, the south-west side of which runs N.W. $\frac{1}{2}$ N., for the distance of one mile from the cape; the farthest out part of the shoals with depth of 3 fathoms bears N. by W. $\frac{1}{2}$ W., and is distant $1\frac{2}{10}$ miles from Cape Eski Stambul.

To avoid them, keep the gap just inside Paleo Kastro open of Yukyeri point, bearing eastward of N. 13° E. (See views on charts Nos. 1,599, 1,608.) A good mark, is not to stand farther towards the shoal than just to open the little islet of Drepano (one of the Rabbit islands) eastward of Gadaro. When Cape Marmara of Tenedos bears about N. 75° W. and is in line with Galley point, a vessel will be well northward of the shoals, and may keep nearer the mainland shore, where there will be less current.

At night, Gadaro island light should be kept bearing eastward of N. $\frac{1}{2}$ W. until northward of Suffren shoals. (For continuation of this coast, see page 109.)

Chart, 1,599.
Var. 4° W.

TENEDOS ISLAND, called by the Turks, Bokcha Adasi, is nearly 6 miles in length in a north-west and south-east direction, and its eastern and broadest part is 3 miles across. At a little more than one-third of a mile within Mela point, the north-eastern extreme of the island, is Mount Elias, a conical hill 625 feet high, conspicuous from the westward. At a short distance south-eastward of Mount Elias, is another hill named Sana, 385 feet high, with a monastery on its summit; the other parts of the island are of moderate elevation, and decline in height towards the western end.

Products.—The island produces corn, cotton, oil, and wine; the latter has always been held in great estimation.

Population.—The population of the island is about 4,200, one-third being Mohammedans.

Lat. 35° 50' N.
Long. 25° 58' W.

LIGHT.—A *white fixed* light is shown at an elevation of 72 feet from a white masonry tower, near the west extreme of Ponente point; it is visible in clear weather from a distance of 15 miles.

South coast.—The best anchorage under the south-west coast of Tenedos island, is reported to be about $1\frac{1}{2}$ miles north-west of Cape Marmara, and southward of the tumulus marked on the chart. The holding ground is mud and sand; there is a good natural landing place here. The whole of this coast is very broken, and foul ground extends off the shore in places for a distance of half a mile.

North coast.—Kheraki.—At about $1\frac{1}{2}$ miles eastward of Ponente point, and about 4 cables from the shore, is the islet of Kheraki, with a rock above water close to its north-east side.

SHIMAL BANK.—Northward of Kheraki is a large and rocky bank named Shimal bank, with shoal patches, on which the depth varies from 5 to $2\frac{1}{2}$ fathoms. These rocky shoals form round the north-western end and northern coast of Tenedos, a series of dangers extending $1\frac{1}{10}$ miles westward, $1\frac{3}{4}$ miles northward, and nearly 3 miles north-eastward of Ponente point, and great care should be taken to avoid them.

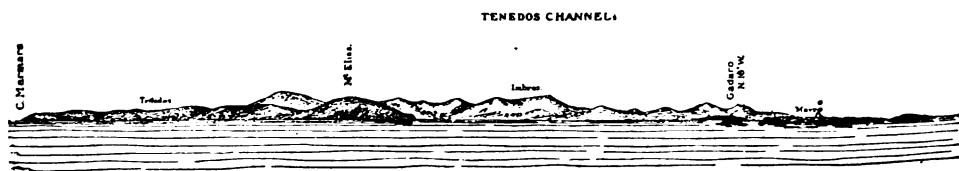
Shimal rock, with 15 feet water over it, lies near the north-east edge of Shimal bank, N.E. $\frac{5}{8}$ E., distant $2\frac{6}{10}$ miles from Ponente light-house.

The mills on Cape Yeni shehr, in line with the south-eastern side of Mavro island, N. 60° E., lead north-westward of Shimal bank.

Gadaro islet, three times its length open north-eastward of Petro islet, the latter bearing S. 54° E., leads northward of Shimal rock.

Streblos islet.—At $3\frac{1}{2}$ miles eastward of Ponente point, and 3 cables from the shore, is Streblos islet, situated on a rocky bank, which extends for two cables outside the islet; nearly half a mile north-westward of the islet, is the outer of a chain of rocks with less than 6 feet water on them, extending 7 cables from the shore.

Talbot rock, one mile eastward of Streblos, is the summit of a rocky shoal nearly a quarter of a mile in length in a N.N.E. and S.S.W. direction, and the least water on it is 3 feet. The shoal is steep-to on its northern and western sides, its outer edge being 4 cables off-shore.



Petro islet.—This small rock or islet, a third of a mile N.E. by N. from Mela point, the north-eastern point of the island, has a depth of 4 to 5 fathoms around it. Chart, 1,599.
Var. 4° W.

Tenedos town, on the north-eastern side of the island, at the foot of Mount Sana, is small, with a population of about 4,000, the houses are almost all built of wood, and surrounded by gardens. It is defended by Ku castle, a white fort, on which the Turkish flag flies. The town is of small commercial importance. Plan on 1,608.
Lat. 39° 50' N.
Long. 26° 5' E.

Water and small supplies of provisions may be obtained.

Port.—The little port of Tenedos can accommodate small vessels only; it is formed by a curve in the shore, and a mole projecting one cable eastward from the peninsula of Ku castle on the north, which shelters it from the northerly winds (*Tramontanes*), usually so violent in the Archipelago. The depth gradually decreases from 6 fathoms at the entrance, to one fathom near the beach at the head, and the bottom is sand and weed. A small vessel may find a berth just south of the mole, and as far in as her draught will admit.

Large vessels may anchor about half a mile eastward of the mole head, in about 9 fathoms, sand and weed. This anchorage, though affording shelter from west, south, and south-westerly winds, is much exposed to north and north-easterly winds, and vessels should be prepared for the sudden shifts of wind to the north-east, which are frequent and dangerous in the winter. As the current nearly always runs to the southward, vessels rarely swing with their heads in that direction, even with a breeze from that quarter.

Consul.—There is a British Vice Consul at Tenedos.

Trade.—In 1906 the imports were valued at 17,950*l.*; and the exports, consisting principally of wine and raisins, at 6,250*l.*

Communication.—The town of Tenedos is a telegraph station. The Austrian Lloyd's steamers call once a fortnight, and those of the Mahsûse Co. call occasionally.

Telegraph cables.—At about 200 yards south-west from the extremity of the southern point of Port Tenedos four telegraph cables are laid, two of which trend southward, passing about 1½ cables from Oinos point; one, after skirting the south-eastern coast of Tenedos at about one cable distant, is connected with Lemnos, the other with Khios. Two cables are laid in an easterly direction for about a mile, and thence between Gadaro islet and Ocean rock; one being continued in a N.N.W. direction, passing about one mile westward of Praso islet and thence northward and eastward into the Dardanelles at Chanak. The other is landed in a cove at the southern end of Bashika bay. Vessels anchoring at Tenedos should avoid the neighbourhood of these cables.

The best anchorage for vessels of war is in 12 fathoms, with Tar point bearing W.S.W. and Gadaro lighthouse N. ¼ W.

TENEDOS CHANNEL.—Northward of Suffren shoals (page 107), the passage between Tenedos and the mainland is wide and clear. The coast between Cape Eski Stambul and Yukyeri point, forms an inward curve, where vessels when working to the northward will avoid the sea, but care should be taken not to stand too close to the shore, which is bordered all along at a distance of more than one-third of a

Chart, 1,599.
Var. 4° 0' W.

mile, with shallow water. The depth in the channel is generally from 15 to 7 fathoms, and the nature of the bottom varies in different places.

Anchorage.—Vessels may anchor off any part of the coast in calm weather, but with fresh north or north-westerly winds it would be prudent to anchor in Yukyeri bay, southward of the point of this name, at about three-quarters of a mile from the shore, in 7 fathoms, mud and sand, with Gadaro islet about N.W. by W., and Yukyeri point bearing North, or if necessary, a little farther in.

Abreast of this roadstead, is a vast forest of oak trees, the timber of which is used for shipbuilding. In the neighbourhood of Alexandria Troas, is the stunted oak which produces the valonea, the kernel of which is cooked and eaten, and the shell used for tanning and dyeing.

Current.—The current in Tenedos channel, sets to the southward from $1\frac{1}{2}$ to 2 knots an hour. The navigating officer of H.M.S. *Polypheumus* remarked in 1894 that with moderate north to north-north-east winds the velocity was checked.

Yukyeri shoals.—Yukyeri is a low salient point, and between it and Tenedos mole the distance is $2\frac{3}{4}$ miles, but the channel is narrowed by Yukyeri shoals, Ocean rock, and Gadaro islet, with passages between them. Yukyeri shoals, which entirely surround Yukyeri point, are composed of sand and rock, with from 4 to 2 fathoms water on them, and extend one mile north and south, and the same distance to the westward. Petro islet touching Gadaro islet, N. 63° W., leads southward of Yukyeri shoals.

Ocean rock.—This rock lies $1\frac{1}{2}$ miles W. by N. $\frac{1}{4}$ N. from Yukyeri point; it has $2\frac{3}{4}$ fathoms on it, and 3 and 4 fathoms at the distance of $1\frac{1}{2}$ cables, on a sandy bank all round it. The edge of this bank is only $1\frac{1}{2}$ cables from that of Yukyeri shoals, and in the narrow channel between, there are $5\frac{1}{2}$ to 7 fathoms water; at about half a mile south-eastward of Ocean rock, there are shoal patches of 5 fathoms.

This channel is not recommended, from the difficulty of recognising the edges of the banks on either side, but a vessel of light draught using it, should keep the south-eastern end of Tenedos island bearing about S.W. by S. The three mills at the southern end of the town of Tenedos, touching the north-west side of Gadaro islet, S. 65° W., or open north of it, lead northward of Ocean rock and Yukyeri shoals.

Gadaro islet and Little Gadaro are about one cable apart, and lie on a rocky shoal, $3\frac{1}{4}$ cables in length east and west; both have a red appearance. Gadaro, the larger and easternmost, is nearly circular, three-quarters of a cable in diameter, and about 30 feet high, with a lighthouse on it. Gadaro islet is 9 cables from Tenedos mole, and nearly 2 miles westward of Yukyeri point; between the shoal surrounding it, and that of Ocean rock, is a passage one-third of a mile wide, and from 10 to $5\frac{1}{2}$ fathoms deep.

Little Gadaro is a mere rock, and the channel between it and Tenedos is $7\frac{1}{2}$ cables wide, and from 13 to 8 fathoms deep, the bottom being sand and weed.

LIGHT.—A *white fixed* light, showing a *red flash every two minutes* is exhibited at an elevation of 59 feet from a white iron tower, 29 feet high on Gadaro islet, it is visible in clear weather from a distance of 13 miles, but is obscured by Tenedos island when bearing eastward of N. 20° E.

Lat. $39^\circ 50'$ N.
Long. $26^\circ 6'$ E.

BASHIKA BAY.—From Yukyeri point, the coast trends northward a little easterly, $4\frac{1}{2}$ miles to Paleo Kastro or Bashika point, and is for the greater part, cliffy and backed by hilly land. Bashika bay is formed by a curve in the coast southward of the latter point, and for $1\frac{3}{4}$ miles in that direction the shore is low with a marshy plain within it, and bordered by shallow water, which, at about one-third of a mile southward of Paleo Kastro, extends off 4 cables. Tree peak (north side of Dardanelles entrance) in line with Demetrios point tumulus, bearing N. 29° E., leads westward of the shoal ground off Bashika point.

Chart, 1,509.
Var. 4° W.

Telegraph cable.—The telegraph cable from the town of Tenedos is landed on a beach $1\frac{9}{10}$ miles northward of Yukyeri point; the landing place near the cable-house is indicated by a stone pillar; vessels should avoid anchoring near the cable.

Paleo Kastro, or Bashika point (on which are remains of the old castle only a few feet above the ground), is a small rounded bluff with the upper edge of the cliff 30 yards within the base, which is fringed all round at a distance of 25 yards by a rocky ledge and large boulders. From the inner edge of the bluff, Paleo Kastro slopes down gradually to the eastward or land side for about 100 yards, where it forms a dip or valley, with a spur from Bashik Tepe.

Lat. $39^{\circ} 53' N.$
Long. $26^{\circ} 9' E.$

Bashik Tepe, an artificial conical mound, nearly half a mile north-eastward of Paleo Kastro, is a good mark; Ujek Tepe, another artificial conical mound or tumulus 284 feet high, nearly $1\frac{1}{4}$ miles eastward of the head of the bay, is also conspicuous. The hilly land west-south-west of Ujek Tepe terminates at the sea in white cliffs, with sandy beach between them. A white stone house with a red roof, stands close to the shore just northward of the northern white cliff; and at about 2 cables southward of the house, is a large earthwork battery. A third of a mile southward of this battery and close to the shore, is situated a building known as the Admiralty picket-house.

Anchorage.—Bashika bay is considered a safe summer anchorage, but the holding ground in some places is uncertain, and as several of H.M. ships have dragged their anchors during winds both from N.N.E. and S.S.W., great attention is required when lying here. Vessels may anchor where convenient, but a berth recommended is in 10 or 11 fathoms water, mud bottom, with Seddul Bahr or European castle just open of Paleo Kastro; Ujek Tepe or tumulus on the plain, open northward of the white cliffs about E. $\frac{1}{2}$ N.; the south-western extreme of Phido islet, about N.W. by W.; and Gadaro lighthouse S.W. $\frac{1}{4}$ S., about three-quarters of a mile from the shore. Small vessels may obtain shelter from northerly winds by anchoring in 5 or 6 fathoms, distant 3 cables from the shore. The water is sufficiently clear at times to admit of the cable being seen on the bottom in a depth of 8 or 9 fathoms.

The bay is a good place for boat sailing, for though the wind is often high, there is not generally too much swell or current. Snipe are to be shot in great numbers after August, fine cock after November, following north or north-easterly winds, and in the cover round the cultivated patches; hares are also abundant and large duck and geese also come in with the hard weather. A north-easterly gale in December 1876 brought in a large flight of woodcock.

Current.—In the outer part of Bashika bay, the current at times runs to the southward at the rate of $1\frac{1}{2}$ and occasionally 2 knots an

Chart, 1,599.
Lat. 39° 53' N.
Long. 26° 9' E.
Var. 4° W

hour, but its strength is less inshore, and occasionally an eddy sets to the northward. It is much influenced by the force and direction of the wind.

Winds.—Gales.—Strong gales from the west and north-westward are not of long duration, and during a gale from the westward, in December 1849, H.M. Ship *Caledonia* experienced an undertow setting from the shore, which caused the ship to ride without much strain on her cables.

The worst gales are from the north-east; southerly gales often blow with violence, but the anchorage is partially sheltered from the latter by the island of Tenedos, and they usually terminate by shifting to the W.N.W. and N.W. During the months of June to October 1853, the wind prevailed from the north-east and was usually moderate enough for boats to water. Capt. Bowden Smith of H.M.S. *Hercules*, in 1876 writes:—"For the first two days after our arrival at Bashika, we had a fresh breeze from the S.W., but on the 29th May it commenced to blow hard from North and N.N.E., and from early in June till the 9th September, the strong breezes were nearly always from the N.N.E. These winds, though fresh and sometimes fiery during the day, usually went down in the evening, the nights being generally calm.

"Thunder storms, and the usual Mediterranean squalls, were experienced during the months of June and July. For the greater part of October and the first part of November, the prevailing winds were still northerly, but from the 27th November to the 22nd December, there was a great prevalence of southerly winds and mild weather, and on the last-named day, and also on the 23rd, it blew a gale from S.S.W. During this gale, the *Triumph* dragged her anchor three times, though having 100 fathoms of cable out; it was thought the anchor could not have bitten properly ere the gale commenced.

"On the 27th December, after a day's light wind with rain, it commenced to blow from the N.E. which freshened to a heavy gale with violent squalls, and lasted three days. Although the force of the wind was quite 10 in the squalls, the sea was not heavy, and the ships rode it out well with two anchors down and steam up. Snow fell on the 28th, but afterwards the weather became mild. Though the breezes were usually stronger from the N.E. than from the S.S.W., the latter caused a more unpleasant sea for landing.

"As strong winds from west or north-west were not experienced, I cannot say how ships would ride out a breeze from that exposed quarter, but my own impression is, they would not suffer, and wind from these points of the compass is said to be rare.

"Climate.—The climate during the summer has been all that could be wished for; though the sun during the day was powerful, the heat was never oppressive, and the nights always cool and fresh. No bad effects have been felt from the large marsh in the neighbourhood, and the health of the men has been excellent. This may partly be attributed to the entire use of distilled water, as the British fleet at Bashika in 1853 suffered severely from fever. There was a marked difference in the temperature at Kavala, or places on that shore, where we found the nights oppressively hot, whilst at Bashika it would be comparatively cool.

"Water may be obtained from the river which runs into the north-eastern part of the bay; with favourable weather, an engine, and a sufficient length of hose, 30 tons a day can be obtained, but the

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approach to the beach is shallow, and watering with boats which have to lie a long way out, is irksome and tedious, besides the risk of fever. On the arrival of the British fleet in 1876, water was procured from the river, but afterwards, owing to impurities which got into it, recourse was had to condensing.”

Chart, 1,500.
Var. 4° W.

Supplies of fresh meat, bread, and vegetables can be obtained at Bashika bay, at reasonable prices.

RABBIT ISLANDS (ancient *Lagussa*), called by the Turks Tacohan Adasi, are a group of four islands or islets, with several shoal rocky patches around them, extending over a distance of about $3\frac{1}{4}$ miles in a north-west and south-easterly direction. Phido, the south-eastern islet, is nearly 3 miles from Paleo Kastro, the nearest point of the coast; and the passage between the islands and the shoals bordering the north coast of Tenedos, is rather less than 4 miles.

Mavro, the largest of the group, is one mile in length east and west and 4 cables in breadth, with its highest part at the western end, where it is clifty; the island is surrounded by shoal water, to a distance of from one to $1\frac{1}{2}$ cables.

Lat. $39^{\circ} 56' N.$
Long. $26^{\circ} 4' E.$

Praso islet, about $1\frac{1}{2}$ cables in extent, is low, and lies a quarter of a mile off the south-western end of Mavro, to which it is connected by a reef or line of breakers; on the reef between, is a large rock named Mikro.

Smith shoal lies W.N.W. $2\frac{3}{4}$ cables from Praso islet; the shoal is a cable in length north and south, with 3 fathoms of water on it, and 8 fathoms between it and the shoal water bordering Praso.

Drepano and Phido, the two southernmost islets, lie on a rocky bank upwards of one mile in length east and west, the former islet near the west, and the latter near the east end of the bank. The bank extends $1\frac{1}{2}$ cables eastward of Phido, and a spit extends one-third of a mile westward of Drepano; Cape Yeni shehr mills bearing N. $58^{\circ} E.$, and just open of Mavro island, lead westward of the spit.

The passage between the 5-fathoms line round these islets and that of Mavro, is nearly half a mile wide, and 9 to 6 fathoms deep.

Anchorage.—A vessel may anchor in any part of this passage, for shelter during northerly winds. In order to keep as near as possible a mid-channel course, the southernmost part of Yeni Kioi village should be kept in line with a peaked hill in the interior, bearing E. $\frac{1}{8} N.$

Current.—The current sets through to the westward (see page 116).

Aldridge rock, with 5 fathoms water on it, lies S.E. by E. $\frac{1}{4} E.$ distant half a mile from the north-east side of Phido islet.

Aird shoals.—The shoals bordering the northern coast of Mavro extend off upwards of one mile from that island; the northern portion is composed of patches of hard sand, interspersed with rocks having from 4 fathoms to 3 feet of water on them, and are called Aird shoals. These shoals are separated from the shallow water fringing the shore of Mavro, by a narrow passage carrying $4\frac{1}{2}$ to 5 fathoms water over rocky bottom.

The west end of Gadaro islet in line with the east end of Phido islet bearing South, leads eastward of Aird shoals.

The current here, sets strongly to the south-west.

Chart, 1,599.
Lat. $39^{\circ} 57' N.$
Long. $26^{\circ} 3' E.$
Var. $4^{\circ} W.$

MANSELL SHOAL.—This is an irregularly-shaped shoal, 4 cables westward of the Aird shoals, and more than three-quarters of a mile in diameter, with general depths of 5 and 4 fathoms, but only 3 fathoms near the central part and northern end. The patch at the north extremity bears N. by W. $\frac{1}{4}$ W. distant $1\frac{1}{10}$ miles from the west end of Mavro island. Between this shoal and Aird shoals, there are from 6 to 10 fathoms, and between its southern end and the bank from Mavro, which are $1\frac{1}{2}$ cables apart, there are $5\frac{1}{2}$ and 7 fathoms.

The eastern extreme of Tenedos island open westward of Praso islet, S. $8^{\circ} E.$, leads westward of Mansell shoal.

Loney bank is about a quarter of a mile in length east and west, and has from 9 to 7 fathoms water on it. The least depth lies with the east end of Mavro S. $19^{\circ} W.$, distant $2\frac{1}{2}$ miles, and in line with the west end of Drepano islet.

Coast.—From Paleo Kastro, the shore trends in a N.N.E. direction for $4\frac{3}{4}$ miles to Cape Yeni shehr, and then turns north-eastward about $1\frac{1}{4}$ miles to Kum Kale or New castle of Asia, on the south side of entrance to the Dardanelles. The cliffy coast is bordered by sand and rocks, on which it is difficult to land. At $1\frac{1}{2}$ miles northward of Paleo Kastro, is the village of Yeni Kioi on a hill 180 feet high, and $1\frac{1}{4}$ miles farther north and close to the coast, is a tumulus 210 feet high. At $1\frac{1}{2}$ miles further on, and close to Cape Yeni shehr, is the village of that name. The plain of Troy lies eastward of this part of the coast.

Lat. $39^{\circ} 59' N.$
Long. $26^{\circ} 11' E.$

CAPE YENI SHEHR (ancient *Sigeum prom.*) is known by a hill about 230 feet high with a large house on its summit, and also nine mills, to the southward of which is the village. The cape springs from high land steep towards the sea, but terminates in a low point. North-eastward, and a short distance inland, two tumuli are conspicuous. These are said to be the tombs of Achilles and Patroclus.

YENI SHEHR BANK.—The shallow water which surrounds Paleo Kastro continues along the coast to the northward, in places extending off nearly a quarter of a mile, and at one mile southward of cape Yeni shehr, the bank of this name with from $2\frac{1}{2}$ to $4\frac{1}{2}$ fathoms water on it, extends off three-quarters of a mile. Off Cape Yeni shehr itself the distance to the edge of the 5-fathoms line is 6 cables, whence this depth of water gradually approaches nearer the coast to Kum Kale, where the depth of 5 fathoms will be found $1\frac{1}{2}$ cables off.

Between Cape Yeni shehr and Kum Kale, the one-fathom contour line extends a long way from the shore, viz., a quarter of a mile from the cape, and half a mile from the shore 4 cables north-eastward of the cape; from thence the edge of this one fathom bank runs nearly straight to the extremity of Kum Kale. The bank was reported to be extending in 1906.

Buoys.—Yeni shehr bank is marked by two small buoys, namely, a red and white buoy moored in 5 fathoms, 2 miles S. $58^{\circ} W.$ from Kum Kale lighthouse, and another similar buoy, also in 5 fathoms, 12 cables S. $66^{\circ} W.$ from Kum Kale lighthouse. These buoys cannot be relied upon.

Anchorage.—To the southward of Yeni shehr bank, there is anchorage much used by tugs or by vessels waiting for a fair wind. The best berth is in 12 fathoms, with Cape Yeni shehr N.E. $\frac{1}{4}$ N., and the tumulus on Demetrios point S.E. by S.

Kum Kale is an old stone castle originally designed for 200 guns, but has now only about 25 in a battery at the water line, and is in a ruinous condition, with a few indifferent houses near it. This castle with Seddul Bahr on the European side, is supposed to command the entrance to the Dardanelles, which is 2 miles wide.

Chart, 1,599.
Lat. 40° 1' N.
Long. 29° 12' E.
Var. 4° W.

LIGHTS.—On the north-western angle of Kum Kale, two *red fixed* lights, placed vertically, are exhibited at 35 and 50 feet above the sea; the lights are shown from a staff on a white house, and are visible in clear weather from a distance of 4 miles. At a distance of $1\frac{3}{4}$ miles they appear as one light.

DIRECTIONS.—Approaching the Dardanelles from the south-westward, the island of Tenedos will be first sighted, and by day at a distance of upwards of 30 miles; at night, the light on Ponente point, the west end of the island, will be seen. A vessel may steer so as to pass westward of the island through the Lemnos channel, or between it and the coast of Asia, known as the Tenedos channel. As the Dardanelles is approached, the current will be forcibly felt, and at times it runs with such strength as to oblige sailing-vessels to anchor in light winds.

The distance between Tenedos and the Kharos bank, off the eastern side of Lemnos (*see* page 106), is about 13 miles, and in order to avoid the bank, a sailing-vessel, working to windward, should tack short of a line passing through Cape Irene (the south-eastern point of Lemnos), and Cape Kephalo (the eastern extreme of Imbros island), bearing about N.E. by E. $\frac{1}{4}$ E. and S.W. by W. $\frac{1}{4}$ W. of each other. The bank, when in its vicinity, will probably be recognised during day by the discoloured water; it may also be avoided by not passing westward of the meridian of the west end of Imbros. At night, Tenedos light should be kept well in sight from the deck.

To the southward of Kharos bank (page 107), the current sets northward about a quarter of a mile an hour.

In standing towards Shimal bank, at the north-western end of Tenedos, tack before the nine mills on Cape Yeni shehr, come open of the south-eastern end of Mavro island. Having weathered Shimal bank, a vessel may seek an anchorage under Mavro island, or off the mainland. In passing between Tenedos and the Rabbit islands, keep on the northern side of the channel, as the current sets to the west-south-west towards Shimal rock. Petro islet bearing southward of S. 54° E., with Gadaro islet open three times its length to the eastward, will clear Shimal rock.

The eastern extreme of Tenedos island kept bearing eastward of S. by E. $\frac{1}{2}$ E. will lead westward of Smith shoal; when northward of Smith shoal, the eastern extreme of Tenedos island open westward of Praso islet, S. 8° E., will lead westward of Mansell shoal. When passing northward of Mavro island, it will be prudent, in consequence of the strength and uncertainty of the currents, to give the island and its shoals a wide berth. The Tumulus, 210 feet high, over Demetrios point, north of the village of Yeni Kioi, bearing E. by S. $\frac{3}{4}$ S. and in line with a peak inland, leads well northward of Mansell and Aird shoals; it should be observed that this mark also leads over Loney bank.

Short tacks should be made northward of the influence of the current, or near the southern side of Imbros island, where north-easterly winds generally draw more to the northward, and where the shore is free from danger outside the distance of one mile, until the vessel on the port tack can fetch Cape Helles.

Chart, 1,599.
Lat. 40° N.
Long. 26° E.
Var. 4° W.

If, in light winds, the strength of the current should render it actually necessary, anchorage may be obtained southward of Imbros (*see page 118*).

Tenedos channel is generally used by vessels coming from the southward, the only danger on entering, being Suffren shoals bordering cape Eski Stambul, which should be given a wide berth (*see page 107*). When northward of these shoals, steer for Gadaro islet, and if it is intended to pass between it and Ocean rock, give the islet a berth of a quarter of a mile; and when the three mills at the south end of the town of Tenedos open north of Gadaro (the mark leading northward of Ocean rock and Yukyeri shoals) steer as convenient to the northward.

The passage most frequented is between Little Gadaro (*see page 110*), and Tenedos mole; it is 7 cables in breadth, from 11 to 7 fathoms deep, free from danger, and easy of access. When working to the northward, the shoal extending from Paleo Kastro should be given a wide berth, and Phido islet should not be approached in a ship of heavy draught, nearer than one mile, so as to avoid Aldridge rock. To clear Aird shoals, northward of Mavro, keep Gadaro islet open eastward of Phido islet bearing South.

Continuing northward, should the buoys on Yeni shehr bank be seen, pass close outside them, and alter course gradually, so as to give Kum Kale point a berth of 2 cables, taking care in running along the edge of the bank not to go into less than 10 fathoms, as the water shoals rapidly.

Should the buoys not be seen, the conspicuous ruined windmill, on the summit of a hill 181 feet high, behind Cape Helles, should be kept in line with Cape Helles lighthouse, bearing N. 20° E., until the large village of Aren Kioi or Ghelmez, on the side of a hill, comes open northward of Kum Kale, N. 88° E., when the course may be altered north-eastward. (*See view A. on chart, No. 1,608.*)

At night the bearings of Ponente point, Gadaro islet, and Cape Helles lights, will indicate a vessel's position.

Cape Helles light should not be brought northward of N. by E. $\frac{1}{2}$ E., until Kum Kale light bears southward of E. $\frac{1}{2}$ S.

Anchorage.—A vessel may anchor anywhere eastward of Tenedos and the Rabbit islands during a calm, and no one should hesitate to anchor in mid-channel to prevent the vessel drifting with the current, but with a fresh wind from the northward, it is best to anchor in Bashika or Yukyeri bays.

Current.—Northward of Rabbit islands, and between them and Tenedos, the current sets west-south-westward. Eastward of Rabbit islands and Tenedos, the current sets southward with a velocity of $1\frac{1}{2}$ to 2 knots per hour. Northward of Rabbit islands, the velocity is about $2\frac{1}{2}$ knots per hour (*see pages 110, 113*).

When approaching the Dardanelles from the south-westward, the north side of the entrance will be identified by the white cliffs of Cape Helles, on which is a conspicuous white stone lighthouse. On the south side of the entrance are the cliffs of Sigeum, and northward of them the hill of Yeni shehr, also steep and cliffy. Another conspicuous mark on the European side is Tree peak, 730 feet above the sea, and nearly 5 miles north-eastward of Cape Helles; it makes as an isolated conical peak with a large tree on its summit.

On a nearer approach, the villages of Yeni shehr and Seddul Bahr will be perceived on their respective sides of the entrance; only a few houses of the former will be seen whilst the vessel is to the southward,

but on bringing it to bear north-easterly, the houses will open out and also the remarkable row of nine windmills. The castle of Kum Kale will also be seen on a low point which stretches from the hill of Yeni shehr northward.

Chart, 2,429.
Var. 4° W.

Seddul Bahr is on the north side of the strait, and stands on the slope of the hill forming Cape Greco, 6 cables eastward of Cape Helles. Here is one of the old stone fortresses which gives its name to the town, and its great size, and the low but massive towers at the angles of the castle, render it a conspicuous object. When these two towers can be distinguished, the entrance of the Dardanelles will be plainly open.

CAPE HELLES.—This cape on the northern side of the entrance to the Dardanelles, is the central of three high, steep, white cliffs, together forming a headland projecting to the south-west, $1\frac{1}{2}$ miles in breadth, Cape Tekeh (*see* page 121) the north-western extreme, is the ancient *Mastusium* promontory, and has a building on it; on Cape Helles, are some ruins, a tomb said to be that of Protesilas, and a white stone lighthouse. On Cape Greco, the south-eastern extreme, is the castle of Seddul Bahr, which with that of Kum Kale defends the entrance of the straits. Though this headland is steep, the shore is bordered by shallow water, and rocks and sand extend from the cape $1\frac{1}{2}$ cables.

Lat. 40° 3' N.
Long. 26° 11' E.

LIGHT.—The white stone lighthouse on Cape Helles is 33 feet high, and exhibits at an elevation of 98 feet above the sea, a *white flashing* light, the flashes occurring *every minute*. The light is visible in clear weather from a distance of 16 miles.

Anchorage.—Vessels sometimes anchor between Capes Helles and Seddul Bahr, to await a fair wind, but it is a bad anchorage. The best berth is in 7 fathoms, sandy bottom, at 4 cables from the shore, with the south angle of the castle bearing about E. by N., and the fort on the height N.E. $\frac{1}{2}$ E.

Seddul Bahr castle (Barrier of the sea) is a quadrangular enclosure with solid walls, and low towers at the angles; it stands on the side of the hill which slopes to Cape Greco, with its lower wall at the water's edge. It is the largest fortress in acreage in the Dardanelles. On the height behind the castle is a fort named Shahim Kalessi.

The small town of Seddul Bahr stands on a hill eastward of the castle, and is one of the pratique posts for coasting vessels proceeding to Constantinople, and very convenient, as a vessel can keep out of the current, under the lee of the cape, while her boat communicates.

LIGHT.—On the south point of the fortress of Seddul Bahr, Cape Greco, is a white house, with a mast on it, from which is shown two *fixed green* lights placed vertically; the upper light is 52 feet above the sea, and visible in clear weather from a distance of 5 miles.

The above lights on the north, with that of Kum Kale on the south, mark the entrance of the Dardanelles at night.

Pratique.—The sanitary conditions of vessels from the Mediterranean bound to, or beyond Constantinople, is enquired into at Chanak Kalessi. (For regulations relating thereto, and for passing through the Dardanelles, *see* Black Sea Pilot.)

Aqueduct.—North-eastward of Seddul Bahr, about one-third of a mile from the shore of Morto bay, are five hydrants of an aqueduct, having the appearance of square pillars.

Chart, 2,429.
Lat. 40° 3' N.
Long. 26° 13' E.
Var. 4° W.

MORTO BAY.—At 1½ miles eastward of Seddul Bahr is another bold steep white point, named Eski Hisarlik, with the ruins of De Tott's battery on it. Between the two, is Morto bay, about half a mile deep, with a sandy shore, except near its extremes.

Rocky bank.—Morto bay is almost filled by shoals of sand and rock; that, continuing round Seddul Bahr, extends from the shore farther eastward, to a distance of half a mile, when its edge turns in towards the head of the bay; the eastern side of the bay is also bordered by a similar shoal, but not so extensive.

Nearly in the centre of the bay, in the narrow space between the two shoals, there is indifferent anchorage. The current runs across the mouth of the bay with great velocity.

Buoy.—The eastern extremity of the rocky bank on the west side of entrance to Morto bay, is marked by a red buoy moored in 6 fathoms water. Close westward of the buoy, there are only 3 fathoms water. The position and colour of the buoy cannot be relied upon.

Anchorage in Morto bay.—To enter Morto bay, bring the western hydrant to bear N.W. by N., and steer for it till about 2 cables past the buoy, then anchor in 14 fathoms, at about half a mile West from Eski Hisarlik point. Morto bay will be found a convenient anchorage for steam-vessels entering the strait just before sunset, but there is very little swinging room in it.

Directions for sailing-vessels.—Vessels under sail entering the Dardanelles during north-east and northerly winds, should close with Cape Helles on the port tack, round Seddul Bahr at the distance of 3 cables, and after passing Morto bay, stand over close hauled into Aren kioi bay on the Asiatic shore, and there work up in the eddy, taking care to tack short of the edge of the main current, which may be distinctly seen, and is usually about 1½ miles from the Aren kioi shore.

When entering the Dardanelles with a north-westerly wind, keep the European shore aboard, and a vessel will thus be able to gain the anchorage westward of Seddul Bahr.

Caution.—Be prepared for squalls from off the land.

Current.—Between Kum Kale and Seddul Bahr, the current runs W.S.W. at the average rate of 1½ knots, the maximum being about 3 knots. The current is stronger on the Asiatic side, and rushes along the edge of Yeni shehr bank with great velocity.

(For description of coast farther east, see Black Sea Pilot.)

Chart, 1,087.
Lat. 40° 10' N.
Long. 25° 49' E.

IMBROS ISLAND.—This island is about 16 miles in length east and west, nearly 7 miles in breadth, mountainous, rising in its loftiest peak (Mount Elias near the centre) to the height of 1,959 feet. It is well wooded, intersected with fertile valleys, abounding in game, chiefly hares and partridges, and produces wine, oil, cotton, and lead. It contains several villages; the population of the island is about 9,000, mostly Greeks.

Cape Kephalo.—The south-eastern portion of Imbros, though much lower than the lofty land behind it, is still about 100 feet high, and stretches out flat at that height from the isthmus at the head of the large bay west of Cape Kephalo. The cape is surrounded by rocks, which project nearly a quarter of a mile northward.

Bank.—This end of the island is bordered by a bank with from 9 to 6 fathoms water on it extending 1½ miles from the shore at that distance south-west of the cape. The eastern edge of the bank is one

IMBROS. NORTH COAST.



Mt Elias. S. 38° W 18 miles.

IMBROS N. W. COAST.



Avlaka Pt.
S. 10° W
31 miles

IMBROS
From a position 6 miles S. 60° E from C. Kephala



Chart, 1,087.
Var. 4° W.

mile and the northern about half a mile from Cape Kephalo. This portion of the coast has a shallower fringe, extending about a third of a mile.

Temporary anchorage.—In the bay west of Cape Kephalo, there are anchoring depths in from 10 to 16 fathoms, fine sand, but when anchoring here in case of actual necessity during a southerly gale, the usual precaution is necessary, as the wind generally shifts suddenly and with violence to the north-west.

Caution.—With the exception of Lemnos and the entrance to the Dardanelles, the Surveys on which chart No. 1,087 is founded, are imperfect.

LIGHT.—On Cape Kephalo are exhibited two *fixed white* lights, placed vertically, the upper light being elevated 128 feet above the level of the sea, and visible in clear weather from a distance of 10 miles. The lights are shown from a mast erected over a large white dwelling with a red roof.

Lat. 40° 7' N.
Long. 25° 58' E.

Cape Alikí.—At 3 miles south-westward of Cape Kephalo is a small cliffy point named Cape Alikí, with shoal water extending from it more than a quarter of a mile; and at $1\frac{1}{4}$ miles farther westward, rocks covered and uncovered, project half a mile southward.

South coast.—Within Cape Alikí, is a lake about $1\frac{1}{4}$ miles in length; vessels often take shelter from northerly winds by anchoring near the cape, abreast the lake. H.M.S. *Devastation*, in October 1877, anchored southward of the lake, in 9 fathoms water, with the extreme point of land to the eastward bearing N. 76° E., and a house with a red roof near the shore, N. 16° W. The red-roofed house is conspicuous from a distance, stands on a slightly elevated piece of land, and is the only building near. H.M.S. *Surprise* anchored near here in 1904 in 6 fathoms, with cape Alikí bearing N. 67° E., and the red-roofed house N. 33° W.; from this position the water shoaled gradually to the shore. The mill, which stands on a slight elevation at the back of the lake, kept on a N. by E. bearing, is a good leading-mark into the centre of the bay. Large ships should not go into a less depth than 9 fathoms.

Water in small quantities may be obtained by digging in the sand close to the beach, a little westward; about 6 miles westward of cape Alikí, it may be obtained in any quantity.

The western part of the south coast of Imbros island should be approached with caution, as there are one or two detached shoals, and shallow water, bordering the shore.

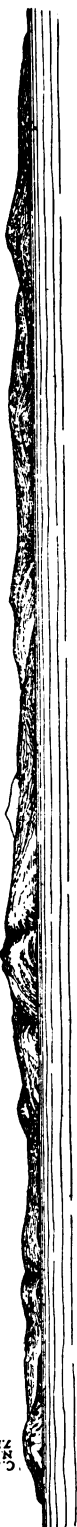
Anchorage will be found about $2\frac{1}{4}$ miles westward of Cape Niger, in 16 fathoms water, good stiff holding ground, with Capes Niger and Alikí in line bearing about N. 80° E.; the east point of the bay N. 62° E., and Avlaka point shut well in behind the west point of the bay and most southerly point of the island, the latter bearing N. 74° W. There is also anchorage eastward of Avlaka point, taking care to avoid the bank stretching off two-thirds of a mile from the shore, 2 miles from the cape. The edge of the bank at the depth of 3 fathoms, bears S.E. $\frac{3}{4}$ E., and is distant nearly 2 miles from the cape.

Avlaka point, the western extreme of the island, is about 11 miles E.N.E. of Cape Plaka of Lemnos, and the passage between is clear and deep.

Currents.—The currents round the western end of Imbros are variable; a strong current has been found setting eastward along the south coast.

GALLIOLI PENINSULA.

C. S. V. A.
N. 62. E.
Z. M. 1888.



North coast.—The north coast of Imbros appears to be clear of danger, but to afford no anchorage, being very steep-to everywhere. Chart, 1,087.
Var. 4° W.

SAMOTHRAKI.—This island (ancient *Dardania*) is 12 miles in length east and west, nearly 7 miles in extreme breadth, and somewhat oval in shape. Mount Fengari near the centre, is 5,248 feet above the sea, a greater elevation than on any of the islands in the Archipelago, excepting Mount Delphi of Eubœa, and the Madara Vuna of Crete. The coast of Samothraki is regular, skirted here and there, close-to, by rocks. It has no port or roadstead, but occasionally anchorage may be found on its south-western side. The island produces corn, oil, honey, and wax; it also feeds a large number of goats. The population is about 4,600, nearly all Greeks.

Communication.—The only communication is by caique with Dédé-Agatch, Thaso, and Imbros islands.

Cape Akrotiri, the low north-western point of Samothraki, which is almost level with the sea, extends $1\frac{1}{2}$ miles from the general line of the coast. Lat. 40° 28' N.
Long. 25° 27' E.

At night too much caution cannot be observed when in its vicinity, as the proximity of the high land renders any judgment of distance doubtful.

SAMOTHRAKI.

MT Fengari
S 5° E



ZURAF A ROCK.—At about $6\frac{1}{4}$ miles eastward of Skepastro point, the north-eastern extreme of Samothraki, is a dangerous ledge named Zurafa rock about 100 feet in length, of which the most part is nearly awash, but in two places, some 50 feet apart, it is dry. At the west end, the highest point of the rock, a small sharp head, is about 2 or 3 feet out of water. The other part exposed, is a flat surface in the centre of the rock, about a foot only above the level of the sea.

When this rock was examined by Captain Wharton in H.M. Surveying vessel *Fawn*, in 1880, there was too much sea to land, or to sound close to it, but apparently the rock is fairly steep-to on all sides. It rises from a small bank of soundings; at one cable northward of the rock there are 16 fathoms. To the westward, the bank extends farther, as 11 and 14 fathoms were carried in that direction for about 4 cables from the rock, when the water deepened. With a moderate south-westerly wind and short sea, the break on Zurafa rock was visible from the deck, when 4 miles distant.

Current.—The current here, has been observed to set eastward 2 knots an hour. Chart, 2,429.

CAPE SUVLA on the mainland, is the western termination of Kislar dagh, a ridge about 300 feet high, on the south side of the entrance to the Gulf of Xeros. The cape bears about N. by E., distant $15\frac{1}{2}$ miles from Cape Tekh (page 117) at the entrance to the Dardanelles; the coast between, forming an indentation $3\frac{1}{2}$ miles deep, con-

Chart, 2,429.
Var. 4° W.

sists at first of cliffs and then of sand, backed by hills in the interior varying from 230 to 950 feet high.

Shoal.—Off the mouth of the brook Chana ovasi, situated nearly midway between Cape Tekeh and Suvla bay, a bank with from 2 to 4 fathoms on it, extends more than half a mile from the shore.

Plan on 1,880.
Lat. 40° 19' N.
Long. 26° 14' E.

Suvla bay or Little Hanafart.—On the southern side of Cape Suvla, is a semicircular bay of the same name, called also Little Hanafart, $1\frac{3}{4}$ miles wide between Cape Suvla and Niebruniessi point, and a mile deep, with from 12 to 5 fathoms, water, sandy bottom; it forms a good summer anchorage, affording shelter from northerly, easterly, and southerly winds. The shore is bordered at a distance of 2 to 3 cables by shallow water and rocks, and both horns of the bay are foul, the rocks extending $1\frac{1}{2}$ cables from Cape Suvla. Within the south part of the bay, is a large shallow salt-water lake communicating with the sea; it is nearly dry in summer and overgrown with rushes.

Landing Places.—The south landing place is situated a cable southward of the entrance to the salt lake, and the other two, are one on each side of a rocky point on the north shore of the bay, 9 cables eastward from cape Suvla.

Coast.—The shore southward of Niebruniessi point, is a shelving beach of hard sand admirably adapted for landing, and has a cultivated plain behind it. The water-courses are dry in summer, but there are wells and springs of good water, at distant intervals. The country round seems fertile, and numerous herds of cattle, goats, &c., feed on the plain. At about one mile inland, a tolerable road leads to the village of Kuchuk Hanafart, and thence a good road leads to Gallipoli.

Chart, 224.

The GULF of XEROS is 17 miles wide at the entrance between Cape Suvla on the south, and Cape Gremea on the north; thence the gulf extends $31\frac{1}{2}$ miles eastward, between mountainous land on either side to the low shore at its head, and has no offlying hidden danger.

Chart, 2,429.

Kishlar rocks.—At $2\frac{1}{2}$ miles north-eastward of Cape Suvla, and half a mile from the shore, is the centre of a bed of rocks. These rocks extend half a mile east and west, are above and below water, and steep-to, the 100-fathoms line of soundings passing about 2 cables outside them.

Plan on 1,880.

Arapos Mermedia bay.—This little bay (Ejelmar), $5\frac{3}{4}$ miles north-eastward of Cape Suvla, is two-thirds of a mile wide between East and West capes (180 feet and 280 feet high respectively) $3\frac{1}{2}$ cables deep, with from 9 to 5 fathoms water; the holding ground is good, being thick black mud, but the bottom near the shore, especially under the cliffs, is foul. The head of the bay consists of about half a mile of clear beach, generally admitting a ship's launch to go close in. A tolerably good road leads into the interior, and between the hills within, is a large plain.

Lat. 40° 22' N.
Long. 26° 20' E.

Shoals.—Shallow rocks lie a quarter of a cable from the north part of each cape. A rock with 3 feet water on it, lies three-quarters of a cable from the point just westward of the Kurtumus Dere. A ledge of rocks, over which there are from 2 to 3 fathoms water, extends in a W.N.W. direction $1\frac{1}{2}$ cables from the eastern shore, 3 cables from East cape. In addition to these dangers, the irregular 3-fathoms line follows the shore of the bay round at an average distance of a cable.

Anchorage.—The best anchorage is in about 8 fathoms of water with West cape bearing N. 63° W., distant 3 cables, and about $1\frac{1}{2}$ cables from the shore.

Good water may be obtained from the Kurtumus Dere that runs into the bay through a cultivated valley, and wood is plentiful. Charts, 2,429,
1,004.
Var. 3° 50' W.

COAST.—From Arapos Mermedia bay east-north-eastward to Pasha Dere, a small jagged rock 16 feet high, close to the shore, the distance is nearly 12 miles, the water being all along deep. Pasha Dere is foul, and 2 cables outside it, there are only 5 fathoms of water. At less than one mile within the coast, is a range of mountains varying from 1,000 to 1,478 feet high. A projecting point, $4\frac{1}{4}$ miles east-north-east of Pasha Dere, has rocks off it at the distance of about one cable; at nearly three-quarters of a mile westward of the point, and a quarter of a mile from the shore, is a shoal with $2\frac{1}{2}$ fathoms on it. Yenikioi, a town on a hill 748 feet high, with some windmills near it, is over a mile from the sea, and $2\frac{1}{4}$ miles south-westward of the point alluded to.

Yenikli liman, a bay $3\frac{3}{4}$ miles farther eastward, will be known by its red cliffs; here is the narrowest part of the Gallipoli peninsula, where in 1853 the English and French threw up a line of earthworks nearly across to Gallipoli strait.

Between Yenikli liman and Cape Xeros $2\frac{3}{4}$ miles north-eastward the coast consists of irregular cliffs from 50 to 200 feet high, but which are broken nearly midway by low marshy land; the cliffs are skirted close to by rocks. Chart, 1,004.

Cape Xeros is the termination of Baklar burnu, a projecting tongue of land forming the western side of a bay named Port Baklar, and on it are the remains of an old mud fort, about 50 feet above the sea; the cape is surrounded by rocks which project about half a cable. Plan on 1,892.

Port Baklar is filled with extensive shoals, the whole shore being skirted here and there by rocks, and half a mile south-eastward of cape Xeros, shallow water extends off nearly that distance. A break or opening in the shoal ground, about $3\frac{1}{2}$ cables from the cape, affords anchorage space for small vessels in from 4 to $3\frac{1}{4}$ fathoms water, good holding ground. A small hill like a tumulus, 4 cables within the head of the port, bearing S. 39° W., leads into the deepest water. An isolated patch with 3 fathoms on it, lies close to this leading-mark, and S.S.E. 4 cables from Cape Xeros. Vessels of heavy draught having occasion to call at the port, should anchor farther out.

Kavach river.—From Port Baklar, the coast trends north-easterly to the head of the gulf, and at about 5 miles N.E. by E. from Cape Xeros, is the mouth of Kavach river; the passage, having a depth of about 6 feet, is between two sand-banks, and the river is navigable for boats as far as the village of Kavach, distant about $2\frac{1}{4}$ miles. Shoal water is reported to exist from one to $1\frac{1}{2}$ miles S.W. by S. from the entrance. From Kavach river, the coast trends northward and westward to Bustan burnu, a point north of Peros island. Chart, 1,004.
Lat. $40^\circ 36'$ N.
Long. $26^\circ 49'$ E.

Shoal.—Between Bustan burnu, and a point 7 cables westward of it (also 2 cables eastward of a low point with a windmill on it), the shore is fronted by shallow water and broken uneven ground, which should be avoided and at half a mile off it between the two points, is a rocky shoal awash, about one cable in length north and south. The shoal lies with the hummock of Mount Dohan Aslan appearing a little open of the west end of Xero mikro, bearing S. 42° E. and distant from the latter $1\frac{1}{4}$ miles. (See view on chart No. 1,892.) To avoid the shoal, keep nearer the islands than the main shore. Plan on 1,892.

Plan on 1,892.
Var. 3° 50' W.

Water may be obtained from a small stream, nearly 2 miles westward of the windmill just alluded to.

XEROS ISLANDS.—**Xeros**, the largest of these three islands, lies $3\frac{1}{2}$ miles northward of Cape Xeros, and is about a third of a mile in average diameter, with a tower and the ruins of a monastery on it; the island is cliffy, with rocks extending about half a cable from its salient points.

Xero mikro.—At 6 cables east-north-eastward from Xeros island, is Xero mikro, nearly a quarter of a mile in length. To the eastward of Xero mikro, separated by a passage $1\frac{1}{2}$ cables wide, and 6 to 10 fathoms deep, is Xero Skopelo; both these little islets are surrounded by rocks, to a distance of about half a cable

Anchorage.—Between Xeros and Xero mikro, there is anchorage in 15 or 16 fathoms water, sand and mud; and to the north, and north-eastward of Xero mikro, there is anchorage for any number of ships in from 10 to 14 fathoms, good holding ground.

Xero mikro is $1\frac{4}{10}$ miles from the north shore of the gulf, and with Xero Skopelo lies on the tail of a bank with from 6 to 8 fathoms water, uniting the two; the bank has from 10 to 14 fathoms on either side of it, and vessels should anchor north-eastward of it.

Chart, 1,004.

Coast.—The shore westward of the Xeros islands to Cape Ibriji, the only salient point on the northern side of the gulf, is bordered here and there by shallow water at the distance of nearly 2 cables; at Cape Ibriji shoal water extends off about $1\frac{1}{2}$ cables, and thence a narrow shoal continues along the shore westward to that of Cape Grenea, but there are no off-lying dangers. It is backed by hills, and mountainous land in the interior. Approaching from Cape Grenea, Cape Ibriji makes like an island, and might possibly be mistaken for Xeros island. Between Bustan burnu and Cape Ibriji, is the village of Kadi Kioi, a mile inland.

Ibriji, a small narrow bay with 150 yards of sandy beach at its head and with deep water close in shore, situated two-thirds of a mile north-eastward of Cape Ibriji, is a good landing place. It is intended to be used eventually as the port for the coal mines of Keshan, 15 to 16 miles inland.

The Currents in the gulf of Xeros are irregular and appear to be influenced by the wind; after a fresh northerly wind for a few hours, a strong southerly set has been experienced, but directly the wind moderated, the current ran strongly, in the opposite direction. In the bight of the coast off Enos, northward of Cape Grenea, the currents are strong (2 or 3 knots an hour) and irregular.*

CAPE GRENEA, the northern point of entrance to the Gulf of Xeros, is a rounded headland composed of low yellow cliffs. The actual cape, a yellow cliff, is separated from yellow cliffs on either side by low sandy beaches, that to the eastward being about one mile in length. It is difficult at first to distinguish the cape from the other cliffs, but it may be recognised by the sandy beaches on each side, and by the fact that the cliff to the eastward is longer, has a cleaner face, and coming from the south, shows two clefts close together appearing like the letter W. The monastery of Amygdhalia is conspicuous from off the cape.

See sketch on page 128.

Shoal.—The whole coast of Cape Grenea is bordered by a shallow bank, but a little northward of the cliffs, and $5\frac{1}{2}$ miles south-

Chart, 1,087.
Lat. 40° 35' N.
Long. 26° 7' E.

Chart, No. 2,836b.

* Nav. Lieut. James Henderson, H.M.S. *Ruby*, 1878.

ward from the entrance to Lake Bori, the bank with 6 to 12 feet on it extends off $1\frac{1}{2}$ miles, narrowing gradually in width until one mile south of the entrance, whence it widens again. Vessels south of the cape should not stand in to less than 7 fathoms water; west and north-west of the cape, for at least 3 miles beyond the cliffs, a vessel should not stand into less than 12 fathoms, as the water shoals suddenly from 10 to 3 fathoms.

Chart, 1,087
Var. 4° W.

Caution.—As several vessels have grounded on the shoal north-westward of the cape, and the current from the westward sets strongly over it, care should be taken when in its vicinity; the shore in this locality should be given a berth of at least $2\frac{1}{2}$ miles. A good mark by day for clearing the shoals, is to keep the town of Enos open of the bluff on the south side of the lake.

Lake Bori is 6 miles northward of the cliffs of Cape Grenea; the shore between, is low, and bordered by shoal water. The lake is irregular in shape, about 2 miles in extent, with from 3 to 6 feet of water. One of the mouths of the Maritza river (ancient *Hebrus*) opens into it, and another mouth disembogues a little north of the entrance.

Chart, 1,087.

Enos.—On the south side of Lake Bori, is the town of Enos and an old Genoese castle, with a population of about 2,000, chiefly Greeks. Enos is the port of Adrianople, with which it has some trade in corn, wool, camel's hair, cotton, leather, saffron, silk, wax, and copper; it is distant from Adrianople about 70 miles, and has water communication by the Maritza, which is navigable for flat boats all the year round, and for barges from October to June.

The entrance to Lake Bori is shallow, and shifts with a gale of wind.

Local sailing boats of about 30 tons can get over the river bar when unlading, the usual depth being $3\frac{1}{2}$ feet; they leave Enos partly loaded and complete outside.

Coasting vessels of any size, anchor with the town of Enos bearing about N.E., and have apparently a little shelter from southerly gales by the shoals of Cape Grenea. There is temporary anchorage off the town in 7 fathoms.

It is, however, recommended that when the summit of Samothraki is covered with clouds (an infallible warning) a vessel should gain an offing.

Consul.—A British Vice-Consul resides here.

Telegraph.—Enos is connected by telegraph with Keshan, and thence with Adrianople and Gallipoli.

DÉDÉ AGATCH or DÉDÉ AGH.—This town is 9 miles north-westward of the mouth of Lake Bori or Maritza, and close eastward of some red cliffs; it stands on low ground covered with trees.

Plan on 2,336b.
Lat. 40° 50' N.
Long. 25° 55' E.

It is the principal port for the export of the products of the sandjak of Adrianople. The principal exports are cereals, hides, and tobacco.

The small harbour is very shallow, only affording shelter for lighters and small vessels; it has silted up considerably since it was opened in 1872, and has not been dredged, consequently it is very difficult for the lighters to load at the quay, especially during a northerly wind, when the water is always lower than at other times.

The quay is about 250 feet in length, and 80 to 90 feet in breadth, and generally blocked with railway carriages and merchandise.

There are no facilities for repairing either hull or machinery.

LIGHT.—To the westward of the town, and about 220 yards from the entrance to the small, or caïque-harbour, a *flashing* light is

Plan on 2,836b.
Var. 4° W.

shown from a white column, the flashes occurring *every half minute*. The light is elevated 115 feet above the sea, and should be visible in clear weather from a distance of 16 miles.

Anchorage.—The best anchorage off Dédé Agatch is in $4\frac{1}{2}$ fathoms mud, from half a mile to one mile from the shore. The water shoals gradually from 10 fathoms at 3 miles distance, to 3 fathoms at a quarter of a mile from the shore, excepting off the point immediately to the west of the town, which has shoal water extending off it for half a mile; otherwise a ship may anchor anywhere. A vessel intending to anchor close in shore should not bring the small or caïque harbour, to the eastward of N. by E., when standing in.

There is no protection from south-west winds, which occasionally blow with great violence, and cause a heavy sea. The fact of a current generally setting along the coast will cause a ship to swing broadside to the sea, and to roll heavily; vessels have usually to put to sea in consequence.

The anchorage off Dédé Agatch is not safe in a gale from S.E. round by south to W.S.W.; although the holding ground is not bad, an exceedingly disagreeable sea gets up with very little wind, and during a gale, the whole place is one sheet of foam.

Chart, 1,087.

Directions.—Vessels bound for Dédé Agatch, and passing to the eastward of Imbros and Samothraki, have two dangers to avoid; the Zurafa, an isolated rock $6\frac{1}{2}$ miles to the eastward of the latter island (see page 121), and the shoal bordering the coast north-westward of Cape Grenea, the northern point of the entrance to the Gulf of Xeros. Several vessels have grounded on the latter danger by keeping so far over to clear Zurafa rock, as to pass too close along the shore southward of the town of Enos. Cape Grenea may be recognised by the hill near Enos, 620 feet high, and which makes as a double peak. From abreast the cape a conical hill in the range behind Dédé Agatch should be steered for, which mark leads direct to the lighthouse. This hill cannot be mistaken, as the hills eastward and westward of it are higher.

After passing the latitude of Zurafa rock, a berth of at least $2\frac{1}{2}$ miles should be given to Cape Grenea (which makes as low yellowish cliffs) and also to all the coast beyond, up to Dédé Agatch. Enos will be seen on the side of a low hill, facing the sea (though it is within and on the south side of the Bori lake), and remarkable by its old citadel and walls. When abreast of Enos, the red cliffs westward of Dédé Agatch will be sighted, and make a good mark to steer for, until the houses are seen.

The coast in the vicinity of Dédé Agatch is low, with a sandy beach, and a mountain ridge at a distance of about 2 miles. This ridge runs at an angle to the coast, joining it at Makri, $7\frac{1}{2}$ miles westward. At a little distance, the ridge appears to slope to the sea at Dédé Agatch, the flat land between not being visible.

Vessels passing westward of Samothraki should avoid its low north-western point, as, although the island is nearly the highest in the Archipelago, that end of it stretches out almost level with the sea for $1\frac{1}{2}$ miles. At night, too much caution cannot be observed, as the proximity of the high land renders any judgment of distance doubtful.

Plan on 2,836b.

Population.—Climate.—The town has a population of about 5,000 inhabitants, and though clear of the low marshy ground surround the mouth of the Maritza, during the summer months fever is prevalent, which, however, is not considered dangerous, and may in a great measure be avoided by taking precautions.

Trade.—1,481 vessels, with a gross tonnage of 290,000 tons, entered and cleared in 1898; the exports and imports were valued at 750,000*l*. Chart, 1,087.
Var. 4° 0' W.

Communication.—Dédé Agatch is connected by rail with Saloniki, Adrianople, and Constantinople, and consequently with the whole of the railway system of Europe. Lat. 40° 50' N.
Long. 25° 55' E.

The Austrian Lloyds steamers call here fortnightly both ways from Trieste to Constantinople, connecting with the principal Greek, Turkish, and Black sea ports.

The French Fraissinet steamship company runs steamers fortnightly to Dédé Agatch from Marseilles; these vessels call at Genoa, Peiræus, Laurium, Saloniki, and Smyrna.

The Deutsche-Levante steamers call monthly on their passage from Hamburg and Malta to Taganrog.

Other steam-vessels call at Dédé Agatch several times a week, affording additional communication with Constantinople, Smyrna, and Saloniki. Vessels also run to Volo and other ports.

There is telegraph communication with the rest of the world.

Water is only procured from wells in summer, and is not good. In winter, the Podomar, a small river that discharges at the east end of the town, affords an ample supply, but it is very muddy. No facilities for watering a ship exist.

Supplies.—Meat, bread, and vegetables can be obtained by contract, but are scarce. No coal is obtainable.

Consul.—A British Vice-Consul resides here.

COAST.—Cape Makri is a little salient, and about one mile eastward of it, is a red cliff; the coast westward continues low, with beach and cliff to Fenar point lighthouse, a distance of about 29 miles. At about 10 miles westward of the cape, Mount Marona near the sea is 2,174 feet high, and the coast at its base is skirted by rocks; farther westward, red cliffs again appear, followed by an irregular low broken sandy shore. At nearly midway between these latter cliffs and Fenar point lighthouse, is a projecting rocky point, and about half a mile southward of it are Apostoli rocks, one of which is above water; these rocks are about $6\frac{1}{2}$ miles from Fenar point, and the shore between is bordered by shallow water, which extends a long way off; and south of Fenar point for a distance of $1\frac{1}{2}$ miles.

The Mounts Marona, Zanthé (3,815 feet), and Pilaf Tepe (6,143 feet) are very conspicuous. The two latter are west of Kara-Agatch.

KARA-AGATCH BAY (Porto Lagos).—At 7 miles westward of Fenar point is Cape Balustra (page 177), a low rocky projection; between these two points, a low broken sandy shore, cut up with the outlets of lagoons, falls back about 4 miles and forms Kara-Agatch bay, known also as Porto Lagos, which is bordered all round by shallow water extending off in places more than a mile. Vessels, however, may anchor with off-shore winds westward of the lighthouse, in about 7 fathoms water, and small vessels farther in at the head of the bay as convenient. Plan on 1,892.
Lat. 41° N.
Long. 25° 9' E.

The bay communicates with Lake Burughiul on the north, by a narrow boat-channel through the broken shore which separates them.

Lake Burughiul (ancient *Bristonis*), within the head of the bay, extends about $7\frac{1}{2}$ miles north and south, is from 6 to 14 feet deep, and bounded on either side by extensive plains; two or three small streams run into it.

VIEW OFF ENOS.

Tahiti Tpt.

C. Grenada

556.9 Miles

N. 4. W.
5. 4. 4.

Mouth of the Amazon



COAST OF THRACE

C. Maked.

N. 62° E.
12 Miles

Bluff of Maronea



LIGHT.—On Fenar point, the eastern side of entrance to Kara-Agatch bay is a lighthouse, from which is exhibited at an elevation of 72 feet above the sea, a *fixed white* light, visible in clear weather from a distance of 10 miles. Plan, on 1,892.
Var. 4° 30' W.

Shoals.—A shoal of 11 feet lies W.N.W. $1\frac{3}{4}$ miles, and another with 16 feet on its north-east end, N.W. $\frac{1}{2}$ W., 2 miles from Fenar point lighthouse. An isolated patch with $3\frac{1}{4}$ fathoms on it lies on the west side of the bay, bearing E. $\frac{3}{4}$ N. $1\frac{1}{10}$ miles from the eastern part of Cape Balustra.

Buoy.—For the use of the Austrian Lloyds steamers calling here, a buoy is placed about a mile off the entrance to the lake, bearing N. by W. $\frac{1}{2}$ W. $2\frac{8}{10}$ miles from Fenar point lighthouse. This buoy is lighted when one of that company's steamers is expected at night.

Caution.—Changes are reported to have taken place in the depths in the northern part of the bay, since the Survey was made.

Communication.—The Austrian Lloyds steamers call fortnightly both ways between Trieste and Constantinople, connecting with the principal Greek, Turkish, and Black sea ports. Kara-Agatch, is connected with the general system, by telegraph with Zanthé (Skecher), a station on the railway from Saloniki to Dédé Agatch, which passes about three-quarters of a mile from the head of lake Burughiul.

Kara Su river.—This river (ancient *Nestus*) rises on the southern slope of the Balkans, and after a S.S.E. course for about 130 miles falls into the sea through the plain of the Nestus; it has two mouths, the western being the deeper, but both are completely barred by sand-banks so that even boats of light draught cannot gain an entrance to the river, and the land between the mouth is swampy. Charts, Nos. 1,086
1,087.
Lat. 40° 51' N.
Long. 24° 49' E.

[For coast westward of this, and Thaso strait, see page 177 *et ante*.]

Chart, No. 2,836b.

CHAPTER V.

THE COASTS OF GREECE AND TURKEY FROM EURIPO STRAIT TO THE KARA SU RIVER, INCLUDING THE ADJACENT ISLANDS.

Chart, 1,554.
 Lat. 38° 30' N.
 Long. 23° 37' E.
 Var. 4° 50' W.

EURIPO.—North roadstead.—The space from Kaki Képhali lighthouse northward to the parallel of Cape Gaidaro, may be considered the northern port or roadstead of Euripo, as with the exception of the shoals presently mentioned, there are anchoring depths all over it, in from 17 to 10 fathoms, mud bottom, sheltered from westerly winds by Cape Gaidaro and the shoal which extends nearly two-thirds of a mile north from it, though in the winter season it would be advisable to anchor within about a mile of the town of Euripo.



Plan, 2,802.

Water.—There is no water to be procured on this side of the bridge. **The strait north of the bridge** is bordered on either side by shallow water, but which leaves in the central part, a narrow, but clear passage. From the point of the Quarantine establishment (in ruins) on the mainland, 4 cables from the bridge, rocky shoal ground extends off half a cable, and also from the point on the opposite side of the strait; the extremes of these shoals are supposed to be marked by buoys. The passage between these shoals is about 120 yards wide, and when the buoys are in position, there will be no difficulty in keeping in mid-channel.*

Telegraph cable.—A cable crosses the strait between the shoal spits just mentioned.

Rocks.—A patch of shoal ground with less than 6 feet water on it, lies with its shallowest spot bearing E. by N. $\frac{3}{4}$ N., distant $1\frac{3}{4}$ cables from Kaki Képhali lighthouse; shoal water under the depth of 4 fathoms extends $1\frac{1}{2}$ cables farther eastward.

A shoal with $4\frac{1}{2}$ fathoms water over it, lies N.N.E. $\frac{1}{2}$ E., distant 8 cables from Kaki Képhali lighthouse. Other points of the coast of Eubœa northward of it, forming the anchorage, are foul half a mile off.

LIGHTS.—At about 100 yards from the end of the point on the west side of the entrance to Euripo strait and about 2 cables north of the Quarantine establishment, is a frame lighthouse, from which is exhibited at an elevation of about 39 feet above the sea, a *white fixed* light, visible in clear weather from a distance of 7 miles.

On the east side, at 40 yards within Kaki Képhali point, from a lighthouse 40 feet high, a *red fixed* light is exhibited, elevated 68 feet above the sea, and visible from a distance of 14 miles in clear weather, from the bearing of N. 1° W., through north to S. 89° W.

[The preceding portion of this Chapter is copied from pp. 75, 76. For description of the channels southward of Euripo, the bridge, and tidal changes, see pp. 72-75.]

Charts, Nos. 2,836b, 426.

* There were no buoys in Euripo strait in August, 1905.

TALANTA CHANNEL (EVOÏKOS), north-west of Cape Gaidaro is clear of danger at a short distance from the shore, which generally is steep to on either side of the channel. The high range of the Kandili mountains in Eubœa, which reach nearly 4,000 feet above the sea, a little within the coast, extend over a distance of 7 miles. The violent gusts of wind which descend from these mountains during north-east and northerly winds, and also the heavy squalls which may blow from the high land on the opposite side of the channel, should be carefully guarded against, in vessels under sail.

Chart, 1,554.
Var. 4° 50' W

South-west shore.—Cape Gaidaro is $3\frac{1}{2}$ miles from the north entrance to Euripo strait. Shoal water extends for a distance of 6 cables to the northward of the cape, and in the bight on its west side, is Gaidaro islet, separated from the shore by a narrow passage 9 fathoms deep. A small group of dry and sunken rocks lies about one-third of a mile off the north end of the islet, with 11 fathoms water between. At $1\frac{1}{2}$ miles inland from the shore of the bight, Mount Ktypa (ancient *Messapus*) rises 3,356 feet.

Port Scroponeri.—At $6\frac{1}{2}$ miles westward of Cape Gaidaro, is the little islet of Gatza, at the entrance of Port Scroponeri, a bight running nearly 3 miles west-south-west, and surrounded by high land; the port does not seem to be resorted to by the natives, there is no village, and the water is deep for ordinary anchorage, being from 20 to 18 fathoms.

The peak over Cape Tamera, the south-eastern point of entrance, is 820 feet high, and the eastern termination of the Scroponeri and Strutzina mountains. Cape Gatza, the north-west entrance point, is $1\frac{1}{2}$ miles N.W. of Cape Tamera, and the water is deep on either side of the little islet of the same name which lies between, but the passage south of the islet is the wider.

Port Larnes.—This little port, the *Larymna* of the ancients, is 5 miles north-westward of Port Scroponeri; it is a narrow inlet running south-westward nearly 2 miles, having from 20 fathoms water at the entrance, to 4 fathoms near its head, where there is a stream of drinkable water, and a bridge, with a mill within it which the stream turns. On the north-western side of the entrance to the port, is St. Georgio, a rocky shoal with less than 6 feet water on it, lying a quarter of a mile from the shore.

Lat. 38° 33' N
Long. 23° 18' E.

Within the entrance on the western side, there are the remains of an ancient fortification of red sandstone, the blocks being rectangular, from 2 to 3 feet in length, and half that in breadth.

Lake Topolias or Copias, whose waters discharge into this port, as well as Lakes Likiri and Paralimni which are connected with it by a canal, have been partially drained and brought under cultivation.

Coast.—Cape Larnes is $2\frac{1}{4}$ miles north-east of the port of the same name, whence the base of the high land trends round to the north-west to Cape Theologos, a distance of about $8\frac{1}{2}$ miles, beyond which, on the west, is Cape Kerata with an old tower on it, and the eastern point of Atalánti bay. The coast between Capes Theologos and Kerata, fronts the north, is $1\frac{1}{2}$ miles in length, and immediately within it, Mount Theologos rises 705 feet and is covered with trees and bushes.

Charts, 1,554,
1,556.

Vessels rounding Cape Kerata, should give it a wide berth, as a shoal extends a quarter of a mile northward of it.

Atalánti bay.—Cape Akritsa, a low sandy point, is 8 miles north-westward of Cape Kerata, and between the two, is Atalánti bay, open to the north; the southern part of the bay (*Sinus Opuntius*) extends

Chart, 1,556.
Var. 5° 20' W

east and west $4\frac{1}{2}$ miles, with from 18 to 10 fathoms water, sand and shells. On the western side of the bay, are the two islands of Atalánti and Gaidaro; the latter is nearly united to the shore by low marshy land, and covers a bight about $1\frac{1}{2}$ miles deep, called Port Armyro, which has from 5 to 3 fathoms water. A rock with 7 feet water upon it lies nearly in the middle of the entrance, which is about half a mile wide.

LIGHT.—A *group flashing* light showing two *white* flashes followed by a *red* flash *every ten seconds* is shown at an elevation of 47 feet from a circular masonry tower, 42 feet high on the extreme of Cape Akritsa; it should be visible in clear weather from a distance of 12 miles.

Mount Khlomo, 3,520 feet high, nearly $5\frac{1}{4}$ miles westward of Port Armyro, and about 7 miles northward of the mount, is Xero vuni, 2,340 feet high, and $3\frac{3}{4}$ miles from Cape Akritsa.

Atalánti island, northward of Gaidaro, is more than one mile in length north and south, 410 feet high, and its southern end is only separated from the shore by a narrow passage 5 to 8 fathoms deep. The island lies at an angle with the coast, and in the bay thus formed westward of the island there is anchorage in from 6 to 10 fathoms, good holding ground. The best berth is about one-third of a mile westward of St. Nicholas, the northern of two little islets close to the shore of Atalánti island, taking care in a heavy-draught ship to avoid the isolated patch of $4\frac{1}{2}$ fathoms between this position and the islet; although the anchorage is open to the northward, the furious gusts of winds which blow over the high land of Eubœa do not reach this shore.

The skala, or landing place, is on the shore abreast of the island, and the town of Atalánti is $3\frac{1}{4}$ miles inland, surrounded with gardens containing abundance of fruit and vegetables, and the whole plain is in a high state of cultivation. Many remains of ancient ruins are found in the vicinity of the bay.

Light.—A *red fixed* light is shown at an elevation of 40 feet, from an iron support, 20 feet high, on St. Nicholas islet; it should be visible in clear weather from a distance of 5 miles.

Communication.—Steamers running between the Peiræus and Volo, occasionally call here. The town of Atalánti is a telegraph station.

Livantes.—At $2\frac{1}{4}$ miles northward of Atalánti island, is Livantes, a slightly salient point, and on the face of the adjacent hill, is the village of the same name; at about $1\frac{1}{4}$ miles north-west of the point, the coast is skirted by rocks, some appearing above water. The whole western shore of Atalánti bay to Cape Akritsa, should be given a wide berth.

Vorlovu bay.—From Cape Akritsa the coast trends westward, and at the distance of 6 miles, is Cape Longos; the low sandy shore between, forms an inward curve, and is backed by high land. Cape Longos is low and sandy, and two-thirds of a mile southward of it, is the village of the same name. At $3\frac{3}{4}$ miles farther west is Vromo Limni, and between is Vorlovu bay about $1\frac{3}{4}$ miles deep, with the village of the same name on the western shore near its head. The depths in the bay are from 15 to 30 fathoms shoal water extending in places a quarter of a mile from the shore.

Vromo Limni is a low projecting point with trees on it, and forms with the Likhades islands on the north, the western limit of Talanta channel.

The North-east shore of Talanta channel is steep to and without danger beyond a quarter of a mile from the shore.

Lat. 38° 40' N.
Long. 23° 6' E.

Limni.—Midway between Euripo and Ædipsos gulf, on the north-east side of Talanta channel, is the town of Limni, situated in a small bay with very deep water. Chart, 1,556.
Var. 5° 20' W.

LIGHT.—On the west point of Limni bay, is erected a metal post 26 feet high, which exhibits at an elevation of 87 feet above the sea, a *fixed red* light, visible in clear weather from a distance of 6 miles.

Communication.—Steamers plying between Peiræus and Volo, call here.

The Deutsche-Levante steamers call here monthly on their passage from Batum to Hamburg.

Limni is a telegraph station.

Cape Therma, so called from hot springs near it, is the eastern entrance point of Ædipsos gulf, and at 3 miles eastward of it, Mount Balanti (ancient *Telethrium*) is 2,890 feet high. The heat of the sulphuric springs is at the boiling point.

GIALTRA BAY.—On the northern side of Talanta channel, and about 8 miles from the western end of Eubœa, is Ædipsos gulf, an indentation about 2 miles square, the narrow continuation westward being known as Gialtra bay. This bay is the only sheltered anchorage on the coast of Eubœa, between Euripo and the Likhades islands, but the water in the central part is rather deep, and no supplies can be procured.

Communication.—Steamers running between Peiræus and Volo, call here in summer. The village of Ædipsos is situated near the eastern shore of the gulf, and is a telegraph station.

LIKHADES ISLANDS.—The passage between Likhades point (the western extreme of Eubœa), and the mainland on the south, is much contracted by a cluster of islets, rocks, and shoals, which extend southward $1\frac{1}{10}$ miles, and are named Likhades islands.

Lat. 38° 49' N.
Long. 22° 50' E.

Megalo Likhades, the largest and most northern of the group, is 6 cables in extent, with traces of extensive ruins on it, and surrounded by sunken rocks and shoal water. The islet is about one-third of a mile from Likhades point, and a narrow passage between the shoals on either side carries 4 and 5 fathoms water, but the tides run through with great rapidity and change in a similar manner to those of Euripo strait, consequently this channel is only fit for boats, or country-vessels with local knowledge.

Rat isles consist of about fifteen small islets and rocks, extending over a distance of little more than a third of a mile, and lying on the rocky bank continuing from the southern portion of Megalo Likhades; they are surrounded by shoal water, and a spit with $2\frac{1}{2}$ fathoms on it projects 4 cables W. by S. from the southern islet.

Strongilo (Strongyli) islet, the southern of the Likhades group, is a small round islet about 104 feet high, on which is a white stone lighthouse; a sandy spit projects from it a little more than a cable to the northward, leaving between it and the 5-fathoms line round Rat isles, a clear space about $1\frac{1}{4}$ cables wide, and 6 fathoms deep, named Strongilo passage.

LIGHT.—The lighthouse on Strongilo islet is a white stone building 30 feet high, which exhibits, at an elevation of 134 feet above the sea, a *fixed white* light varied by a *flash* every two minutes, thus:—a *faint fixed* light ninety seconds; eclipse ten and a half seconds; *flash* nine seconds; eclipse ten and a half seconds, and visible in clear weather from a distance of 16 miles.

Chart, 1,536.
Var. 5° 20' W.

Lat. 38° 48' N.
Long. 22° 51' E.

A shoal with 3 fathoms water on it, and 15 fathoms between it and the islet, lies $1\frac{1}{2}$ cables eastward of Strongilo.

Research rock, with $3\frac{1}{2}$ fathoms on it, and steep-to, lies $6\frac{1}{2}$ cables S.E. by E. $\frac{1}{2}$ E. from Strongilo. It is also nearly a mile N.E. $\frac{1}{2}$ N. of Vromo Limni, the southern entrance point of Talanta channel.

Vromo passage.—The channel between Strongilo and Vromo Limni is one mile wide, and with the exception of Research rock, is deep and clear, and named Vromo passage.

Tides.—It is high water, full and change, in Vromo passage at 9h. 30m.; springs rise $2\frac{1}{2}$ feet, neaps $1\frac{1}{2}$ feet.

Tidal streams.—The flood, or easterly stream, commences to run into Talanta channel at about 3 hours after low water by the shore, and the ebb to run out 3 hours after high water, but both streams are much affected by the winds. The velocity of the streams under ordinary conditions, is about $1\frac{1}{2}$ knots per hour.

GULF of ZEITUN or STYLIDA (LAMIA).—This gulf extends westward 14 miles from the western end of Eubœa, but the gulf proper, from the points of entrance, to its head, is limited to about 8 miles. The points of entrance, Cape Kiliomeli the southern, and Cape Ekinos the northern, are $1\frac{1}{4}$ miles apart, low and steep-to. Halfway to the head, the gulf widens to 3 miles between the shoal water on either side. Its southern shore and head is irregular, with shallow bights, some of which are a mile deep, and a large extent of low swampy ground, through which the River Ellada runs into the sea, at the base of Mounts Suvalla 4,140 feet and Alaph 3,560 feet high.

LIGHT.—At 87 yards south-west of the sandy extreme of Cape Kiliomeli, from a circular iron lighthouse 26 feet high, and at an elevation of 30 feet above the sea, is exhibited a *fixed white* light, varied by a *red* flash of *about seven seconds* duration, *every thirty seconds*; visible in clear weather from a distance of 9 miles.

Stylida.—The town of Stylida stands at the head of a shallow bight on the north shore, and the village of Agia Marina on the same shore is $1\frac{1}{2}$ miles south-westward of it. An iron wharf extends 460 feet from Agia Marina on which are steam cranes.

The port of Stylida is easy of access for vessels drawing less than 16 feet of water.

Buoys and beacons.—The entrance to the channel is marked by two light-buoys, showing a *green fixed* light on the starboard side and a *red fixed* light on the port. A beacon showing a *green fixed* light marks the inner end of the channel. Inside the port there are two beacons showing *white fixed* lights marking the edge of the shallow water.

Communication.—Steamers running between Peiræus and Volo, call daily at Stylida. It is also a telegraph station.

Anchorage.—There is anchorage in from 10 to 15 fathoms all over the gulf, but the usual anchorage is off the village of Agia Marina. Vessels should keep as far over on the northern shore as possible, as the winds which blow along the base of the chain of mountains on the north, are not so likely to be charged with miasma as the night air in the southern part of the gulf. The nearest anchorage to the Pass of Thermopylæ is off Agia Triada, on the south shore; the bottom is soft mud, but very tenacious.

OREOS CHANNEL.—This channel, leading to and from the Gulf of Zeitun and the Talanta channel, is bounded on the north-west by the mainland, and on the south-east by the north-western coast of Eubœa, and takes its name from the district of Oreos in that island. It runs in a general W.S.W. and E.N.E. direction for about 18 miles, and is $1\frac{1}{4}$ miles wide at its narrowest part. Chart, 1,556.
Var. 5° 20' W.

Tidal stream.—A tidal stream sets through Oreos channel $1\frac{1}{2}$ miles an hour, and at the same rate in and out of the Gulf of Zeitun.

Coast.—The shoal bordering Likhades point, the western extreme of Eubœa, continues along the coast northward, and at $1\frac{1}{2}$ miles northward of the point, rocks are reported to extend off nearly half a mile.

Cape Vasilina.—From the reef just mentioned, the coast trends a little more easterly $1\frac{3}{4}$ miles to Cape Vasilina, which with Cape Spilia on the mainland contracts the channel to a width of $1\frac{1}{4}$ miles. The cape is low and sandy, like the shore between it and Likhades point. Lat. 38° 47' N.
Long. 22° 52' E.

Mount Elias, 2,200 feet high, rises about three-quarters of a mile to one mile from the cliffs at its base, eastward of the cape. The sandy shore, which is a little salient between the cliffs, is bordered by shoal water.

LIGHT.—A *flashing* light showing *green* over the dangers to the southward and *white* elsewhere, is exhibited at an elevation of 33 feet from a square masonry tower, 31 feet high, on Cape Vasilina; it is visible in clear weather from a distance of 11 miles in the *white* and 6 miles in the *green* sectors. For sectors, *see* Light List, Part V., and chart.

Cape Drepano, on the main or north coast, is nearly 3 miles eastward of the entrance to the Gulf of Zeitun, and is a low sandy tongue, steep-to. The shore eastward, nearly to Cape Spilia, is also low and sandy; this latter cape, as before stated, is $1\frac{1}{4}$ miles northward of Cape Vasilina, and the two form the narrowest part of Oreos channel.

Gardiki bay, between Cape Spilia and the spur of an elevated ridge on the east, is nearly $1\frac{1}{2}$ miles deep, with anchorage in 14 to 18 fathoms at its head; the eastern shore is bordered by a shallow bank, close to which the water is deep. The land in the vicinity is well cultivated, two or three streams disembogue, and the village of Gardiki stands on a hill $1\frac{1}{2}$ miles within.

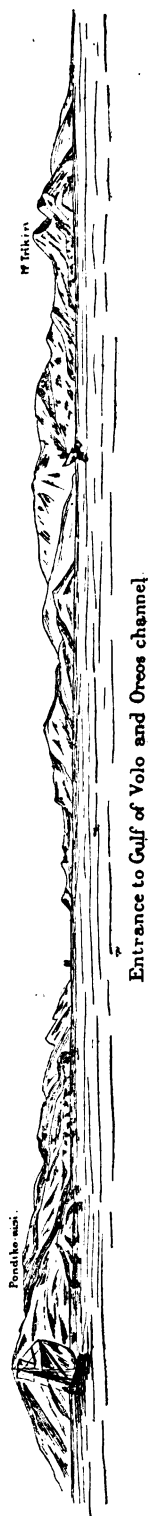
Telegraph.—The village of Gardiki is a telegraph station.

Nikolaos islet, with a chapel on it, lies about $2\frac{1}{2}$ miles eastward of Gardiki bay, at the foot of Mount Elias on the mainland. A shoal extends from it to the north, and between it and the shoal bordering the shore, is a narrow passage with 17 fathoms water. Lat. 38° 56' N.
Long. 22° 58' E.

Port Vathi.—At about half a mile northward of Nikolaos islet, is a small circular inlet almost land-locked, with 8 to 22 fathoms water, named Port Vathi; the entrance is shoal on either side. North-eastward of Port Vathi, is the bay and village of Glypha.

Cape Agios Sostis, the eastern extreme of Glypha bay, is a projecting point with a narrow shoal extending from it which borders the shore northward; the eastern side of the cape consists of white cliffs.

Argiro nisi, an island 5 miles north-eastward of Cape Agios Sostis, is about three-quarters of a mile in length east and west; a large rock lies off its southern extreme, and shallow water extends one cable beyond it, with 35 fathoms close to the edge of the bank. The island is connected to a narrow projecting point of the coast by a



rocky ridge, on which is a small islet; the ridge is steep-to on either side, and there are 4 and 5 fathoms water on it between the island and islet, but it is no passage for a ship. Argiro nisi is $1\frac{1}{2}$ miles southward of Cape Stavros (page 144), the north-eastern point of the entrance to Oreos channel, and the southern point of the entrance to the Gulf of Volo. Chart, 1,556.
Var. 5° 20' W.

LIGHT.—On the eastern extreme of Argiro nisi, is a cylindrical masonry tower 21 feet high, from which at an elevation of 114 feet above the sea, is exhibited an *alternating* light, showing alternately *red* and *white* each for a period of *five seconds* duration, and visible in clear weather from a distance of 16 miles. Reported irregular, 1907.

OREOS BAY on Eubœa island, about $3\frac{1}{2}$ miles southward of Argiro nisi, affords fair anchorage in 16 or 17 fathoms, sandy bottom; the best berth is half a mile from the shore, north-westward of the skala, off the ruins of Oreos, which are on a hummock rising suddenly from the plain. In 1896, the inhabitants of the present village of Oreos, numbered 692. On the west side of the bay, is a little islet with the ruins of a turret on it, and north-westward of the islet are rocks above and below water, with deep water near them.

The pretty and prosperous little town of Xero Khori is situated in a fertile plain, about $1\frac{1}{2}$ hours' journey eastward of the skala, and contained in 1896 a population of 3,464.

LIGHT.—A *red fixed* light is shown at an elevation of 24 feet above the sea from a post 19 feet high on the end of the pier at the skala; it should be visible in clear weather from a distance of 5 miles.

Oreos shoal.—This danger is one-third of a mile in length north and south, with two rocky heads having less than 6 feet water on them, and 3 fathoms between. The southern rock lies N.N.W. $\frac{1}{4}$ W. distant two-thirds of a mile from the islet on the west side of the bay. The northern rock lies E. $\frac{3}{4}$ N. distant $2\frac{3}{4}$ miles from Cape Agios Sostis. The shoal is steep-to, and may generally be recognised by the discoloured water.

Lat. 38° 7' N.
Long. 23° 4' E.

A clump of trees on the plain north-eastward of Oreos, in line with the foot of Asmeni ridge, N. 72° E., leads northward of the shoal; the shoal will also be cleared by keeping the western extreme of Skiathos well open of Cape Kephala, the latter bearing N. 60° E., until the town of Trikiri is shut in with the high land of Cape Stavros.

Beacon.—A masonry beacon, painted in blue and white horizontal bands, surmounted by a conical topmark, 16 feet above high water, has been erected on Oreos shoal, but in 1904 it was reported to be only about 6 feet high, and to have no topmark.



Communication.—Steamers running between the Peiræus and Volo call at Oreos bay occasionally. The village of Xero Khori, just alluded to, is a telegraph station.

Coast.—At nearly $2\frac{1}{2}$ miles south-westward of Oreos bay, is a low swampy point, from which a rocky shoal extends off about 2 cables, and parts of it are a very little under water. To avoid it keep the western point of Skiathos, N.E., open of Cape Kephala, the extreme of the low

Chart, 1,597.
Var. 5° 20' W.

land of Eubœa. To avoid these dangers at night, keep on the northern side of the channel. (For Trikiri and Volo channels, *see* pages 142, 144.)

NORTH-EAST COAST of EUBŒA.—From Cape Doro, at the south-eastern end of Eubœa (*see* page 76), the north-east coast of that island trends in a west, and then north direction, and consists principally of high precipitous rocks without even shelter for the smallest description of boats, nor scarcely a place where a boat can land. The castle of Philagra, apparently a Venetian fortification, is about 10 miles from Cape Doro, and 17 miles further north is Port Petries.

Port Petries is a little bight forming the north shore of an indentation nearly 2 miles long north and south, by $1\frac{1}{2}$ miles in breadth. The port affords shelter from north-easterly winds, and anchorage for small vessels within about 2 cables of the shore, in 10 fathoms water, sandy bottom. It would appear from the growth of herbs and strong brushwood close to the shore, that southerly winds, which generally blow hard in the winter season, do not come home in this little port. A road from here leads across to Aliveri bay, Euripo channel.

Chart, 426.

Cape Octonia.—At $7\frac{1}{2}$ miles beyond Port Petries, is Cape Octonia, the eastern termination of the mount of the same name, which, at $2\frac{1}{2}$ miles inland, is 2,380 feet high; the cape is a projecting point, the south-eastern extreme of Kumi bay. Half a mile southward of the cape are two large rocks or little islets, the outer of which is known as Karvuno islet.

Plan, on 426.

Kumi bay is formed between Cape Octonia, and Cape Kumi 8 miles N.N.W., receding from the line of these capes nearly 3 miles; vessels are sometimes built here, being near the pine forests of Mount Delphi.

Lat. 38° 38' N.
Long. 24° 7' E.

Harbour.—A harbour for small craft is formed by two breakwaters, the southern of which extends 400 yards at right angles to the shore; the northern one is about 900 yards long, the outer end overlapping the southern breakwater, leaving a narrow but apparently deep entrance between them. In the year 1899, 19 small sailing vessels were counted in the harbour.

Large vessels anchor temporarily in 10 or 12 fathoms, half a mile eastward of the harbour.

Light.—A *red fixed* light is shown at an elevation of 28 feet, from a metal shed on the head of the northern breakwater.

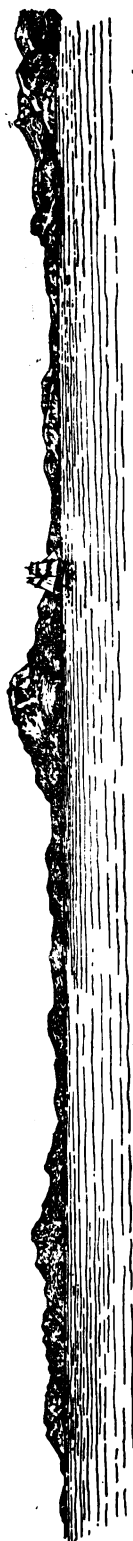
Kumi town is situated about a mile from the harbour. The population, amounting to 4,840 in 1896, are chiefly seafaring, though a considerable trade is done in oil, wine, and lignite.

Communication.—The steamer from Peiræus and Lavrion, to Skyros, calls here once a week. The town of Kumi is also a telegraph station.

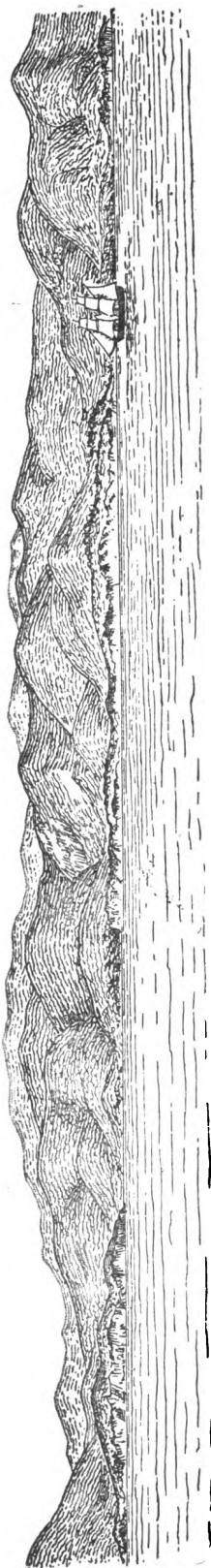
Glaro islet.—The bank bordering the coast within the 100-fathoms line, extends from the shore of Kumi bay, about 4 miles, and has from 64 to 15 fathoms water on it; near its edge, and 5 miles due North from Cape Octonia, is the little islet of Glaro.

Prassudo islet.—At nearly $3\frac{1}{2}$ miles N.N.E. from Glaro, and 4 miles from Cape Kumi, is the islet of Prassudo, about 80 feet above the sea, flat, with high cliffs, lying on the southern end of a bank with from 35 to 75 fathoms on it. The islet and lighthouse are important marks for this part of the coast of Eubœa.

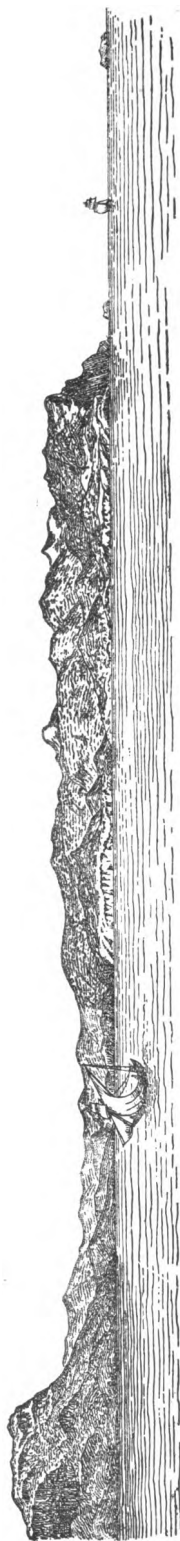
LIGHT.—On the summit of Prassudo islet, is erected a circular tower of masonry, 57 feet high, from which is exhibited at a height of 140 feet above the sea, a *white flashing* light, the flashes occurring *every five seconds*, and visible in clear weather from a distance of 18 miles.



C. DOBO TO C. KUMI.



PORT PETRIES.



KUMI BAY.

Islets.—From Cape Kumi, the coast takes a westerly direction and at the distance of 23 miles is Cape Sarakeniko. A little westward of Cape Kumi are the islets of Plati and Kili; about 10 miles farther west is the islet of Kheliatho, 190 feet high, and a little over a mile beyond it, is Tria nisia. All these little islets are close to the shore, and the water is all along deep.

Coast.—At 3 miles westward of Cape Sarakeniko, is a small sandy bight, and in its vicinity is a little village; between 5 and 6 miles farther on, is Port Mantudion or Kimasi, another small bight with a village near it; these little bights are frequently visited by small coasting vessels which are always hauled up on the beach. Although quite open to the north-east, vessels occasionally take in cargoes of manganese at Port Mantudion.

Telegraph.—The village of Mantudion, situated about 2 miles westward of the port of that name, is a telegraph station.

Lephko islets, the inner of which is 130 feet high, form a cluster of small islets and rocks on a bank extending $1\frac{1}{2}$ miles from the shore; they lie nearly 10 miles north-north-west from Port Mantudion, and form a salient point of the coast.

Pondiko nisi is about $7\frac{1}{2}$ miles N.W. $\frac{1}{2}$ N. from Lephko islets, and halfway between, are Myrmikonisos rocks, one of which is above water. These rocks are about a quarter of a mile in extent, steep-to, and the inner rock is about half a mile from the shore, with 35 fathoms water midway between. Pondiko nisi is 6 cables in length east and west, 230 feet high, and lies a little more than half-a-mile from Cape Artemision, the northern extreme of Eubœa, and on the southern side of entrance to Trikir channel (*see* page 142). Between Pondiko nisi and Cape Artemision, there are from 10 to 40 fathoms water, and a short distance south-eastward of the island is the smaller islet of Praso nisi.

LIGHT.—A light showing *white and red fixed and white occulting* sectors is exhibited at an elevation of 203 feet above the sea from a circular masonry tower, about 62 feet high, situated on the north coast of Pondiko nisi; it should be visible in clear weather from distances of 21 and 14 miles in the *white and red* sectors respectively. For sectors *see* Light List, Part V., and chart.

Mount Psara rises over this end of Eubœa, 1,320 feet high. The coast hence to the low shore of Cape Kephala has no off-lying danger, and the distance is about 9 miles (*see* page 137).

CURRENT.—When navigating the north-east coast of Eubœa, great attention should be given to the probable set of the current, more especially during north-easterly winds. In the great bight between Capes Doro and Octonia, the almost unbroken line of precipitous coast is exposed to the full force of the strong north-easterly winds, which send in a heavy sea, and also accelerate the south-westerly current from the Dardanelles.

From abreast of Cape Octonia to about the middle of the bight, a current of $1\frac{1}{2}$ knots an hour to the southward has been experienced, and thence to near Cape Doro an increased rate of 2 knots an hour in the same direction, and being deflected to the southward and eastward, it at times sweeps round Cape Doro at the rate of 3 knots an hour (*see* page 77).

SKYROS ISLAND (pronounced Skiros) is the chief of the northern Sporades, or islands lying north-eastward of Eubœa. The population in 1896 amounted to 3,512. It is $15\frac{1}{2}$ miles in length in a N.W. by N. and S.E. by S. direction, irregular in form, varying from less than 2 to $6\frac{1}{2}$ miles in breadth, and its greatest elevation, Mount Kokhilas, in the southern part, is 2,565 feet high. The southern part

Chart, 426.
Var. $5^{\circ} 10' W.$

Chart, No. 1,556.
Lat. $38^{\circ} 57' N.$
Long. $23^{\circ} 28' E.$

Chart, 426.

Chart, 2,048.
Var. 4° 50' W.

of the island is uncultivated, the high mountains are intersected by deep gullies, and are rugged, except towards the summits, where they are clothed with oaks, firs, and beeches.

The northern part, though mountainous, is of less elevation. The vine and corn grow on the hills; oaks, planes, and fruit trees, in the valleys. Corn, figs, and the vine flourish on the plains, one of which is about 4 miles in extent. The wheat of Skyros is equal to the best in the Archipelago; wine, corn, wax, honey, oranges, lemons, and madder, are exported in large quantities. The island is well watered and affords pasture to a few oxen, and numerous sheep and goats, many of which are exported. Skyros, the chief town, is on the north-east side of the island; the houses are flat-roofed, and generally of two stories, of which the lower one is built of stone, and the upper of wood.

Communication.—In addition to the telegraph, there is regular steamboat communication with Peiræus, Volo, and other ports.

The Deutsche-Levante steamers call monthly on their passage from Batum to Hamburg.

Lat. 38° 46' N.
Long. 24° 41' E.

LIGHT.—A *white flashing* light, the flashes occurring *every fifteen seconds*, thus:—flash, *two and a half seconds*; eclipse, *twelve and a half seconds*, is exhibited from a cylindrical masonry tower, 41 feet high, with dwelling attached, situated on Lithari point. The light is 314 feet above the sea, and visible in clear weather from a distance of 25 miles, from the bearing of S. 14° W., through west, to N. 74° E., excepting when obscured by Sarakino island; it is not then visible when bearing east of N. 63° E. On account of damage by an earthquake, every seventh flash is followed by an eclipse of *thirty seconds*, 1908.

PORT TREBUKI (TRISTOMON), about $4\frac{1}{4}$ miles westward of Lithari point, is a bay about $1\frac{1}{2}$ miles wide, and nearly the same deep, with from 25 to 35 fathoms water in the central part, but with anchoring depths along the northern and eastern shores.

Channels.—At the entrance, are the two islands of Plati and Sarakino, the latter being much the larger. They form three passages into the port; the western is named Marmora channel, the middle, Piato channel, and the eastern, Sarakino strait. These passages carry deep water in mid-channel, but the shores on either side, except the eastern side of Piato channel, are bordered by narrow shoals; Marmora channel is the best.

The port is considered an excellent place of shelter, when vessels bound through the Archipelago, are caught in a gale of wind. The wind, however, comes down from the mountains in heavy gusts. In taking Piato channel, keep the eastern shore aboard.

KALAMITZA BAY.—This extensive bay, 3 miles north-westward of Port Trebuki, is separated from it by a hilly peninsula which terminates on the south in Marmora point, and on the north in cape Nikolo; off the latter cape are the Diavati islets, of a reddish colour (*see* view on chart No. 2,048). Kalamitza bay is protected on the west by Valáxa island, $2\frac{1}{2}$ miles in length, and 670 feet high. The entrance between Latomeio point, the south end of Valáxa, and Exo Diavati and Diavati islets on the south-east, is one mile wide. The islets should not be approached too closely.

Arazo road.—At the head of the bay, is a valley which separates the mountainous land on the north-west from that on the south-east, and gives to the island at a distance, the appearance of being divided into two parts. In front of the valley, is a semi-circular bay with a white sandy beach, affording anchorage in from 19 to 10 fathoms water, mud, gravel, and weed, good holding ground, and named

Arazo road. The water, unless pretty close in, is deep, and the bottom steep, and during strong northerly winds which prevail in summer, care should be taken not to start the anchor.

Chart, 2,048.
Lat. 38° 50' N.
Long. 24° 34' E.
Var. 4° 50' W.

Linaria cove to the westward of Arazo road also affords good anchorage, but the water is rather deep. Here there are only a few fishermen principally engaged in the lobster fishery.

There are narrow passages midway between Exo-Diavati and Diavati islets, and also between the north end of Valáxa island and the tongue of land projecting from Skyros, which may be used by small vessels. Of this latter passage, Commander Napier of H.M.S. *Torch*, in 1874, writes:—"The *Torch*, drawing 12 feet three inches of water, "passed through between Valáxa island and Skyros, but it is not at "all prudent to use this passage, even by vessels of 12 feet draught. "I do not consider it to be more than 100 yards wide at most, tortuous, and the navigation difficult; we had but an inch or two to "spare while going through."

Stinangali (Pepkho) bay north of Valáxa island is principally used for loading marble. On the north side of the entrance is Buves islet and it is further protected by Skyrópulon and Erinia. There is a small pier to which vessels secure with anchors to seaward, but as the bottom is rocky and a ground swell frequently runs into the bay great care must be exercised; and in the event of a westerly wind setting in it is necessary to go to sea.

Skyrópulon.—This island, 5 miles westward of Valáxa, is $1\frac{1}{4}$ miles in diameter, and 617 feet high; its eastern side is bordered by a rocky shoal, which extends off nearly 3 cables, on the north-east extremity of which is a large rock; a rock also shows above water, nearly one-third of a mile south-west of it. Midway between Skyrópulon and Valáxa island, is Erinia islet, narrow, but one mile in length, north and south; the middle of its western side is bordered by shoal water, and its south-end is foul a short distance off, and should not be rounded too near.

Erinia rocks consist of three patches with 5, 6, and 8 fathoms water on them respectively, the outer patch with depth of 6 fathoms lying S.W. $\frac{1}{2}$ S. $1\frac{8}{10}$ miles from the south end of Erinia islet. All three rocks, lie southward of a line joining the south extremes of Skyrópulon and Valáxa islands.

Clearing-marks.—The little islet of Buves ($1\frac{1}{4}$ miles north-west of Valáxa) shut in with the south end Erinia islet, bearing N. 62° E., leads north-west of the rocks; and Diavati islet, S. 88° E., well open of the south end of Valáxa island, leads southward of them.

Caution.—Although the least known depth on these patches is 5 fathoms, it would be well to avoid them in a large ship.

Coast.—Mount Oros, 1,050 feet high, rises over Cape Oros, the western extreme of Skyros; the cape is steep-to, and the 100-fathoms line of soundings passes within one-third of a mile of it. Between the cape and Stinangali bay, are Oros and St. Phokas bays, open to the south-west and south, with deep water, except close in, where small craft occasionally seek shelter from northerly winds. The island of Kuluri lies on the south side of the cape, and four little islets front the bays.

Between Cape Oros and Kartsimon point, the northern point of Skyros, the coast is irregular, and off it are two or three small islets or rocks, but no danger at the distance of half a mile.

Kartsimon point.—The northern end of Skyros terminates in Kartsimon point, a sharp rocky projection surrounded by shoal water extending northward half a mile, and off it are several large and small rocks, above and below water.

Lat. 38° 58' N.
Long. 24° 29' E.

Chart, 2,048.
Var. 4° 50' W.

South Podia rocks.—Northward of the rocky shoal just mentioned, and separated from it by a narrow deep passage, is a chain of rocks covered and uncovered extending one mile northward, and on its northern end is an islet one-third of a mile in extent; this group is named South Podia rocks.

North Podia rocks lie on a shoal two-thirds of a mile in length north and south; they consist of a narrow islet one-third of a mile in extent, with rocks at each end. The channel between North and South Podia rocks is a little more than half a mile wide, and midway from 17 to 21 fathoms deep; the shoals extend from the rocks on either side. The outer end of the North Podia rocks is $2\frac{3}{4}$ miles, N. by W. $\frac{1}{4}$ W. from Kartsimon point.

Vrykolakonisia rocks.—From Kartsimon point, the north-east coast of Skyros trends S.E. $5\frac{1}{2}$ miles to Pureia point, and is skirted by rocks in places a quarter of a mile off. Pureia point is low with two windmills on it, and surrounded by a cluster of large rocks named Vrykolakonisia, with shallow water extending off nearly $1\frac{1}{4}$ miles, and to the southward the same distance.

Vrykolakonisia spit is a rocky bank with from 6 to 9 fathoms water over it, extending E. by S. 3 miles from the eastern Pureia point.

Skyros town, about a mile to the southward of Pureia point, consists of an ancient and a modern town; the former in ruins is on the summit of a conspicuous crag-like hill, the latter at the foot of the same hill half a mile to the northward of the ancient town.

Anchorage.—In 1904, H.M.S. *Pyramus* anchored in 12 fathoms to the south-eastward of the modern town, with the outer Vrykolakonisia islet bearing N. by E. The town is not easily recognised at night as it is not lighted.

Lat. 38° 54' N.
Long. 24° 35' E.

Dimitrius rock.—A shoal about a quarter of a mile in extent, north and south, lies nearly three-quarters of a mile from the shore fronting the town of Skyros. In the centre of the shoal, is a rocky head named Dimitrius, with 3 feet on it, bearing nearly South $1\frac{2}{10}$ miles from Pureia point; elsewhere on the bank, there are $2\frac{1}{2}$ to 4 fathoms. Between the shoal and the town, there are from 5 to 8 fathoms.

Coast.—Southward of the town of Skyros, is a small bay called Port Akhili, and hence to Arazo road on the south-west side, is the narrowest part of the island, the distance across being only $1\frac{2}{3}$ miles. The coast from Port Akhili to Lithari point, the south-eastern extreme of Skyros, is composed of irregular steep cliffs, with deep water all along. Mount Kokhilas, 2,565 feet high, is situated $1\frac{1}{2}$ miles from the coast. Rocks, one of which is uncovered, lie about $1\frac{1}{4}$ cables off Lithari point and are steep-to.

Chart No. 1 556.

TRIKIRI CHANNEL.—This channel between the northern end of Eubœa on the south, and the mainland on the north, leads to the Gulf of Volo, and Oreos channel (*see* page 135). It is $5\frac{1}{2}$ miles wide at the entrance between Pondiko nisi and the Magnesian promontory, narrows within to $4\frac{1}{2}$ miles, and runs W. $\frac{1}{2}$ S. rather more than 12 miles, when it divides, one portion trending north-westward to the Gulf of Volo, the other to Oreos channel. It is approached from the south-eastward between the Skopelos islands and the coast of Eubœa, and from the northward through Skiathos channel; there are no dangers in Trikiri channel, and the water is deep.

PONDIKO NISI.—LIGHT.—*See* page 139.

Platania bay.—Good anchorage during northerly winds can be obtained in Platania bay, at the southern end of the Magnesian pro-



Chart, 1,556.
Var. 5° 20' W.

montory, a little to the eastward of the sandy beach, and $1\frac{1}{4}$ miles westward of Arapi point.

GULF of VOLO (PAGASITIKÓS).—Volo channel, the name given to the entrance to the Gulf of Volo is 3 miles wide between the Trikiri peninsula, and Cape Stavros, and between Cape Kavulia (the western extreme of the former) and the western shore. There are no dangers, and within, the gulf opens out 18 miles east and west, and extends 14 miles northward.

The gulf is surrounded by high land; on the west side of the entrance is Mount Klimo, 2,981 feet high; on the east, the peninsula of Trikiri is 1,040 to 2,171 feet high, whilst to the north, Mount Pelion rises 5,316 feet above the sea. The gulf is bounded on the east by the Magnesian promontory, which extends southward from Mount Pelion, and by the Trikiri peninsula connected to it by a narrow isthmus, on the south.

Lat. 39° 6' N.
Long. 23° 4' E.

LIGHT.—A *red fixed* light is shown at an elevation of 40 feet from a mast over a white house, 23 feet high, on Cape Kavulia; it should be visible from a distance of 6 miles in clear weather; but its visibility has been reported (1907) to be uncertain.

Trikiri anchorage.—Small vessels visit Trikiri bay situated three-quarters of a mile south-east of Cape Kavulia (page 146) and secure with their sterns to the shore. The village is composed of about a dozen houses, the town of Trikiri being on the heights above, and not visible from the shore.

Telegraph.—Trikiri village is a telegraph station.

Plan on 1,556.

Port Phtilio.—The entrance to this port is on the western side of Volo channel and $3\frac{1}{2}$ miles westward of Cape Stavros (page 137). The port is about 2 miles deep, and in the north-western part, there is anchorage in from 12 to 14 fathoms, sand and mud. On the summit over Cape Pirgo, 490 feet high, is a conspicuous square tower. It was from this place that Achilles is said to have embarked for the siege of Troy.

Two small piers have been constructed on the south-east side of the peninsula of Ahilion for the embarkation of copper ore. Anchorage may be obtained off them in from 7 to 13 fathoms water. A rock with less than 6 feet of water over it is reported to exist a cable off-shore on the south side of the approach to the anchorage, but its existence is doubtful.

Shoal.—A shoal with a depth of 6 fathoms over it is situated nearly in the middle of Port Phtilio $6\frac{1}{2}$ cables S. $\frac{1}{4}$ W. from Cape Pirgo summit.

Chart, 1,556.

Nies bay, situated on the western side of the gulf, about 4 miles from its entrance, has depths of from 10 to 26 fathoms, and might afford temporary anchorage, but is exposed to the northward.

Plan on 1,871.

PORT MIJELLA is also situated on the western side of, and about 9 miles from the entrance of the Gulf of Volo. It is sheltered from the south-east by St. Nikolo island, which is from 50 to 60 feet high, and from the north-west, by a promontory separating it from Port Surbi. Between Maxwell point, the north-east extreme of this promontory, and Vincent point, the north extreme of St. Nikolo island, the distance is three-quarters of a mile and depth 24 fathoms, whence the soundings gradually decrease to 3 fathoms, with mud bottom, three-quarters of a cable from the head of the port, eastward of the town; off the town itself, depths under 3 fathoms extend $1\frac{1}{4}$ cables.

The port is three-quarters of a mile in length, by half a mile in width, and open to N.N.E. There is not more than 2 fathoms between St. Nikolo island and the mainland. With the exception of the bank at the head, the depth of 3 fathoms will be found within half a cable of

the shores of the port. The best landing in north-west winds, is in the south-west corner of the port. A good anchorage berth is in 8 to 10 fathoms west of the channel inside St. Nikolo island; a large ship should anchor farther out.

Mijella town or Amaliopolis, was so named in honour of a former Queen of Greece, and founded with the view of encouraging immigration, and had in 1896 a population of 685.

A valley bounds the town on the north, and separates the rising ground of the peninsula from the heights of the mainland.

Communication, &c.—Mijella is connected by telegraph with other parts of the world. Steamers from Volo to Peiræus, call occasionally at Port Mijella.

Quarantine is performed on St. Nikolo island.

PORT SURBI is the name given to the south corner of Almiros bay. It is separated from the port last described, by a promontory connected to the main by an isthmus less than a third of a mile broad. The northern extremity of this promontory is called Almiros point. Queen Olga hill, 522 feet high, is the highest part of this promontory.

Smith point is the eastern entrance point to the port, the breadth of the latter, here, being $1\frac{1}{2}$ miles. From this point, the port runs in southward a little over 2 miles, with depths over mud decreasing from 13 fathoms westward of Smith point, to 3 fathoms, 4 cables from the head.

The depth of 5 fathoms will be found a cable off the eastern shore, while on the western side not more than this depth will be found 3 cables off. The head of the bay cannot be approached with this depth to a less distance than 6 cables.

Almiros and Surbiotika rivers empty into the low marshy head of the port; the latter was the old boundary between Greece and Turkey.

Lefroy patch, with $4\frac{1}{2}$ fathoms rocky bottom, is the only isolated danger in the port. It bears S.S.W. $\frac{1}{2}$ W. one mile from Smith point.

Anchorage.—Port Surbi affords more room and shelter than port Mijella, but the low land renders it unhealthy. Vessels may anchor in 7 fathoms about 4 cables eastward from the landing pier at Zingheli and inside Lefroy patch, or in Fearless cove on the eastern side of the port, in 8 fathoms, mud bottom at each place.

Pier.—The landing pier at Zingheli on the western shore, may be recognised by a red-roofed house. A road leads from the pier to the town of Almiros, prettily situated about 4 miles north-westward.

Communication.—Steamers running between Volo and Peiræus, occasionally call. The town of Almiros is a telegraph station.

Coast.—From Port Surbi, the low marshy shore of Almiros bay trends northward for $6\frac{1}{2}$ miles, then eastward for nearly the same distance under high land, to Anghistri point $3\frac{1}{2}$ miles from the town of Volo

Agio Nicholas, a small islet, lies S.W. by W. $\frac{1}{2}$ W. half a mile from Anghistri point, and has a sunken rock about a cable from its south side.

Coast.—From Anghistri point, the coast turns abruptly to the north-west for $1\frac{1}{2}$ miles and then north-eastward for the same distance to Cape Sesklo, which will be again alluded to, in detail, in the description of the port of Volo. Between the headlands mentioned, the western shore of the gulf recedes a mile, forming a bay, from the head of which a shoal bank extends about 2 cables. This bay is at the mouth of a valley flanked by an amphitheatre of hills, the ridge south of it rising to a height of 1,818 feet, those on the west to 1,427 feet, while the Bulbulithera hills on the north side are 660 feet high.

Plan on 1,871.
Var. 5° 20' W.

Lat. 39° 10' N.
Long. 22° 52' E.

Chart, 1,556.

Lat. 39° 18' N.
Long. 22° 58' E.

Chart, 1,556.
Var. 5° 20' W

From Anghistri point to the cultivated point on the opposite shore, the Gulf of Volo contracts to a width of $3\frac{1}{2}$ miles, forming a square-shaped bay, which at the distance of $2\frac{1}{2}$ miles from its mouth contracts still more, forming the port of Volo, to be described after the eastern side of the gulf.

Eastern shore of Volo gulf.—From Cape Kavulia (which with the lighthouse, were alluded to on page 144), the eastern shore of Volo channel trends about 3 miles north-north-eastward with deep water close to it, and is backed by a ridge rising to a height of 1,287 feet.

Paleo Trikiri is the larger of two islands lying off the north-west part of Trikiri peninsula. It is $1\frac{3}{4}$ miles in length north-east and south-west, by three-quarters of a mile in breadth, and 424 feet high. Between it and the peninsula, is a channel 4 cables broad, and 35 to 22 fathoms deep.

Shoals.—From Pardalos point, the north point of Paleo Trikiri, two shoals with a depth of 2 fathoms on each, lie N.E. by E., 4, and 2 cables, respectively distant.

Tsamados shoal with 2 fathoms on it, lies $2\frac{1}{2}$ cables N.E. from Alexi point, the eastern extremity of Paleo Trikiri. In other parts, the island is steep-to.

Pithu islet is situated 8 cables north-westward of Paleo Trikiri. It has dry rocks lying off its southern and western extremities, which, together with the rest of the islet, are steep-to, with the exception of a 6-fathoms patch 4 cables S. $\frac{3}{4}$ W. from the south point. Between this patch and Paleo Trikiri there is a channel with a depth of 32 fathoms. Pithu islet, with Almiros point on the west side, may be said to mark the boundary of Volo channel on the north.

Trikiri harbour.—From Trakhila point, three-quarters of a mile eastward of Paleo Trikiri, the north coast of the peninsula turns sharply to the southward, and south-westward, forming the north-west shore of Trikiri harbour, where the water is inconveniently deep for anchoring. The head of the harbour reaches to within half a mile of the shore of Trikiri channel.

From this narrow corner, the broken-up shore of the Gulf of Volo runs in a general north-east by east direction, $6\frac{1}{2}$ miles to Kapri point, the western entrance point of Port Vathudi.

Presutha islet.—Nearly in the middle of this portion of the shore of the gulf, is a deep bight, in the outer part of which, is an islet 44 feet high, called Presutha islet.

Between the latter and Port Vathudi, are two smaller bays, the western of which is known as Port Varelia, with a cluster of dry and sunken rocks in the middle of its entrance.

Shoals.—A rock with 6 feet of water on it, lies W. $\frac{1}{4}$ N., distant half a mile from Presutha islet. Another rock with the same depth on it lies nearly 2 cables south-west of it, and a patch with 5 fathoms is situated N.W. by W. half a mile from Presutha islet.

PORT VATHUDI is situated in the extreme south-east corner of the Gulf of Volo, the head of the port reaching within a mile of Andriami bay in the Trikiri channel, and marking the junction of Trikiri peninsula with the Magnesian promontory. This port is protected by Alatas island, $1\frac{3}{10}$ miles long, with an extreme breadth of a quarter of a mile. It is 200 feet high, and separated from the south-west angle of the port by a 2-fathoms channel, one cable broad. The port is entered between Kapri point, the north extremity of Alatas island, and the straggling village of Melina on the shore half a mile east of it.

Lat. 39° 9' N.
Long. 23° 11' E.

Plan on 1,871,

The extreme length of the port is $1\frac{3}{4}$ miles, the width of the channel into it being at three-quarters of a mile southward of Kapri point, reduced to $1\frac{1}{4}$ cables, with a depth of 18 fathoms. The port now expands into a roughly circular basin, the diameter of which between the 5-fathoms lines is about half a mile, and depth in the middle, 17 fathoms, mud bottom. With the exception of the bar connecting the south end of Alatas island to the main, and the shallow bank extending one cable from the broad cove on the eastern side of the port, not less than 3 fathoms will be found half a cable distant from its shores.

A third of a mile eastward of the narrows, the land rises to a height of 530 feet.

Coast.—From the entrance to Port Vathudi, the eastern shore of the Gulf of Volo trends north, and westward, with deep water close to it, 14 miles, to the cultivated point opposite Cape Anghistri already mentioned. From this point, fronting the village of Lekhonia, the shore runs north and north-westward forming two slight bays for $2\frac{3}{4}$ miles to Goritza point, the eastern entrance point of the port of Volo. Plan on 1,871.
Var. 5° 20' W.

PORT of VOLO.—This port is situated near the centre of the north side of the gulf of that name. It is oblong in shape, being $1\frac{1}{4}$ miles in length and about three-quarters of a mile broad. From the depth of 10 fathoms, which runs approximately from Cape Sesklo to Goritza point, the depths gradually lessen as the head is approached, and anchorage may be taken up as convenient, though large vessels usually anchor in about 8 fathoms. Chart 1,556.
Plan on 1,196.

LIGHT.—On Cape Sesklo, or Fanari point, and 50 yards from the beach, a *red fixed* light is exhibited at a height of 82 feet above the sea, from a mast erected over a white house; it is visible in clear weather from a distance of 6 miles. Lat. 39° 21' N.
Long. 22° 58' E.

Bank.—A small stony bank lies with its shallowest part, $6\frac{1}{2}$ fathoms, half a mile S.E. from Cape Sesklo lighthouse.

Volo town, with a population in 1896, of 16,788, fronts the north-eastern shore of the port. The inhabitants are mostly Greek, the Turks occupying the old Turkish town and castle of Volo on the other side of the railway. The ruins of ancient Pagasæ (a name still in official use) are situated on Cape Sesklo, while those of Demetrius still exist on the southern slope of Goritza hill on the opposite shore.

Breakwater.—A breakwater is under construction. Starting from the end of the sea wall on the eastern shore N. 52° E. from Yolkas point it will run S. 40° W. for 220 yards and thence S. 72° W. for about 680 yards.

The line of the breakwater is indicated by five buoys.

Light.—The end of the breakwater under construction is marked by a light-boat showing a *green fixed* light. Vessels must pass to the westward of this light-boat.

Piers.—These are three in number, the outer one of stone extending from the fish market, about 270 yards, with a breadth of about 60 yards, and having a depth of 18 feet at the outer end; near its extreme end is a shelter-house painted red. A sea wall in an unfinished state is built from the inner end of this pier in a south-easterly direction about 500 yards. This wall is continued from the pier in the opposite direction about 320 yards, where there is a small artificial harbour suitable for small craft.

The railway pier is about 480 yards in length, the outer end being in about 20 feet, the depths gradually shoaling to the shore. On each

Plan on 1,196.
 Lat. 39° 21' N.
 Long. 22° 58' E.
 Var. 5° 20' W.

side of the railway pier, and a little within the outer end, a mooring buoy is laid down, in addition to which, five others are placed a little outside the pier end.

The western pier, on which is situated the Post-office and a flagstaff, is about 150 yards in length; it is built of stone, and has 5 feet water at the outer end.

Light.—An unwatched *red fixed* light is shown at an elevation of 17 feet from the southern corner of the eastern pier.

Quarantine.—The quarantine station is situated upon the island of St. Nikolo, port Mijella.

Coal.—About 10,000 tons of Welsh coal are imported annually, and about 3,000 tons are usually in stock; it is brought off to vessels in lighters of from 10 to 50 tons. Small quantities of patent fuel can also occasionally be obtained.

Water.—Good water from Artesian wells is procurable in lighters; ship's steam-launches being required to tow them off.

Supplies are fairly plentiful and at moderate prices, but notice is necessary if large quantities are required.

Trade.—In 1906, 113 foreign steam-vessels of 124,956 tons entered the port; of which 18 vessels of 33,020 tons were British.

The imports are iron, steel, coal, manufactured goods, paper, rice, sugar, coffee, &c., and were valued in 1905 at 295,945*l*. The exports are tobacco, silk, olives, hides, chrome ore, olive oil, &c., and were valued in 1905 at 378,854*l*.

Communication.—Greek steamers run daily to, and arrive from Peiræus; the Austrian Lloyd's call fortnightly both ways between Trieste and Constantinople and steamers of the Johnston line call from Great Britain and Peiræus monthly. The Deutsche-Levante steamers call monthly on their passage from Batum to Hamburg. There is telegraphic communication with the Peiræus, and thence to all parts.

Railway.—The railway communicates with the interior of Thessaly; viz., Larissa, 37½ miles, and Kalabakka 101½ miles. A continuation of the line from Larissa is under construction, which will connect with Athens and also with the Turkish railway system.

Tramway.—A steam tramway runs to the village of Lekhonia.

Harbour dues.—Vessels are subject to harbour dues.

Tides.—There is a rise and fall of tide at Volo, of about 8 inches.

A British Consul resides at Volo.

Repairs.—Only very trifling repairs can be effected.

SKOPELOS or THESSALIAN ISLANDS.—These islands belonging to Greece, extend from the south end of the Magnesian promontory in Thessaly, in an east-north-east direction for about 48 miles, and front the entrance of the Gulf of Saloniki. They consist of eight principal, and several smaller islands and rocks, and are named Skiathos, Skopelos, Khelidromi, Peristeri, Pelago, Iura, Piperi, and Skantzura, besides the smaller islands or islets and rocks. They form an interesting and beautiful group, and their appearance from the sea is most pleasing, particularly Skiathos and Skopelos. The climate is generally agreeable, but sometimes the heat is excessive, and sudden changes in the weather are common, as with but little warning, a heavy gale succeeds a calm. The islands are generally healthy, though in the months of August and September, fevers are of common occurrence.

Chart, 2,072.

SKIATHOS, the nearest of these islands to the coast of Thessaly, is 6 miles in length, about $3\frac{1}{2}$ miles in extreme breadth, and mountainous, its greatest elevation being Mount Stavros, 1,448 feet high, at the north-east end. The island is rich in wood and thicket, and the steep sides of the hills with which it abounds, are overspread with evergreen foliage. The vine, the olive, and barley are cultivated here and there. An excellent wine is made, and silk is produced with success. A few small vessels are annually built. The population of Skiathos, numbering 2,790 in the year 1896, is almost entirely occupied in seafaring pursuits.

Chart, 1,556.
Var. $5^{\circ} 10' W$.

Town.—The modern town of Skiathos is prettily situated on a projecting point on the south-east coast, with densely-wooded hills behind it, but the streets are poor. It stands on the site of the ancient town, which was destroyed by Philip of Macedon, when, with a view to security from pirates, the inhabitants built their town at the north extreme of the island on a steep and lofty mass of rock, to which the only access is by a wooden bridge. In 1829, the inhabitants returned to the ancient site. The deserted town at the extreme north presents a singular and picturesque appearance and on all sides, except under the bridge, the precipitous rock is washed by the sea.

Plan on 1,196.
Lat. $39^{\circ} 10' N$.
Long. $23^{\circ} 31' E$.

Communication.—Besides the telegraph to all parts of the world there is regular steamer communication with Peiræus, Volo, and other ports.

Skiathos harbour extending from the town north-eastward, is an inlet about three-quarters of a mile deep, and half a mile wide at the entrance narrowing to its head. The north-western side is bordered by shallow water, which in places extends one cable from the shore; close to the shore adjoining the town is an islet 50 feet high. East of it, nearly in the middle of the entrance, is a smaller islet, 15 feet high, having a shallow bank extending from its western side, a quarter, and from its northern end, half a cable. A narrow ridge of from $3\frac{1}{2}$ to 5 fathoms extends in a N.N.W. direction to the shore.

The harbour is safe with any wind; the holding ground immediately inside the smaller islet in the entrance, is bad, and it is recommended to anchor in 11 fathoms, mud, and good holding ground N.E. by N., $1\frac{1}{2}$ cables from this islet, so as to have room to veer, as heavy breezes come on without warning from the northward. This little harbour is rendered more secure during southerly gales from the protection afforded to it by the islands of Mirango, Zogria (Pakhia), and Zogriaki, which have deep water between them, though a shoal borders Zogria and extends 3 cables northward from its north end.

The Lazaretto, consisting of three small houses, with a mole for landing, is on the eastern side of the harbour, opposite the town.

Tide.—The tide has been observed to rise at Skiathos about one foot, the stream apparently turning with high and low water by the shore.

Directions.—Vessels bound for this harbour from the northward between Skiathos and Skopelos, should pass eastward of Aspro, Arkakion, and Repi islets, as there is no safe passage inside them. After rounding the latter islets at a prudent distance, steer for Mirango, give it a berth of at least a cable and pass south of it, and eastward of the little islet at the entrance of the harbour.

When entering the harbour from the westward, the passage between Kavo Kalamaki (the southern extreme of Skiathos) and Zogriaki, is deep and clear. When passing eastward of Zogria, do not go too near, and give its northern end a berth of half a mile.

Chart, 1,556.
Var. 5° 10' W.

There is no other safe anchorage in Skiathos, the bays on the north-west and southern sides having deep water and rocky bottom. The bays on the south side, as well as Skiathos harbour, have a small lagoon or swamp at their heads, and the inhabitants say that fevers, during the summer season, are common; the town is yearly visited by sickness.

Supplies.—It is difficult to procure any animal food but goat's flesh, and poultry is scarce. A little fire wood and fruit may be obtained, and a small quantity of water from two wells behind the town.

SKIATHOS CHANNEL.—This channel, between the island of Skiathos and the coast of Thessaly is a little more than 2 miles wide, with sunken dangers and irregular soundings.

Cape Sepias, the eastern point of the Magnesian promontory, is very steep, 365 feet high and of a very dark colour; the next point to the north being reddish, these two points form an excellent mark for vessels coming from the north to distinguish Skiathos channel from Skopelos channel.

Currents.—The currents are variable and influenced by the winds, but generally set to the northward at from one to 2 knots an hour. Captain Schweisgut, of H.I.M. German ship *Hum*, on 26th January, 1886, reported that at two miles southward of Cape Puda, the south-west extreme of Skiathos, during a calm, he found a current setting E.S.E. at the rate of 2 knots an hour. In light winds, a vessel under sail should give the dangers a wide berth.

DANGERS.—Lephtari rock (ancient *Myrmex*) is the crown of a rocky shoal about half a cable in extent, with deep water on its south side, and from 25 to 30 fathoms, close-to, all round. It can generally be seen by keeping a good look out, as it is just awash, though at times when the sea is smooth it may not be detected until close to it; with a little swell only, it has been observed that the sea did not break. The rock lies one mile from the coast of Thessaly, or about one-third the distance across to Cape Puda, the south-western point of Skiathos, and with Marino rock in line with Kavo Kalamaki, bearing S. 75° E. A few years ago there were the remains of an ancient building on Lephtari rock; the hewn stones of which it was built were plainly to be seen.

Kastro nisia, the outer islet at the north end of Skiathos, twice its length open of Cape Gurnais, N. 54° E., leads eastward of Lephtari rock and westward of Agia Elena rock.

Marino rock, 8 feet above water, rises from a bed of sunken rocks which are nearly 4 cables southward of the west point of Platania bay, on the south coast of Skiathos; the rocks are steep-to, and between them and the shore the water is $5\frac{1}{2}$ fathoms deep.

Cape Puda shoal.—A shoal, with $2\frac{1}{4}$ fathoms on it, lies about a quarter of a mile southward of Cape Puda, and bears the name of that cape.

Agia Elena rock, with 9 feet water on it, and 5 fathoms between it and the coast of Skiathos, lies 9 cables N.W. $\frac{3}{4}$ N. from Cape Puda, and may generally be seen by keeping a good look-out. Cape Promiri, the north-western point of the Skiathos channel, in line N. 17° W. with Cape Sepias, leads westward of Agia Elena and Cape Puda shoals.

Gurnais shoal, 3 cables off Cape Gurnais (situated three-quarters of a mile north-east of Agia Elena point, the west point of Skiathos), has 3 fathoms water on it, and is steep-to. Cape Griva of Trikiri peninsula, in line or just shut in with Arapi point, S. 67° W., leads north-west of Gurnais shoal.

Lat. 39° 9' N.
Long. 23° 24' E.

Euryalus rock, on the western side of the channel, and about the same distance from the shore of the Magnesian promontory, with 16 feet on it, lies S. $\frac{1}{2}$ W. about 6 cables from Cape Sepias. Chart, 1,556.
Var. 5° W

The foregoing are the off-lying dangers; the rest of the coast line of Skiathos island, and the mainland shore of Skiathos channel, are skirted with scattered rocks, but they are close in, and do not impede navigation.

Directions.—When entering Skiathos channel from the south-eastward, give Cape Puda a berth of about three-quarters of a mile, and steer N. 17° W. with Cape Promiri in line or a little shut in with Cape Sepias, until the old town of Skiathos, at the north extreme of the island, is open of the western side of Skiathos, then keep in mid-channel.

From Trikiri channel, and near Arapi point, keep within half a mile of the main coast until the south end of Zogria is nearly in line with Cape Puda, bearing E.S.E., then steer as convenient.

If from the northward, and bound outside Eubœa, keep in mid-channel until the south extreme of Zogria is just open of Cape Puda, E.S.E., then steer about S.S.E.; if bound for Trikiri channel, the mainland should be kept aboard or within the distance of about half a mile, to lead north-westward of Lephtari rock.

SKOPELOS ISLAND, with a population of 5,295 in the year 1896, is 10 $\frac{1}{2}$ miles in length in a north-west and south-east direction, rather less than 5 miles in extreme breadth, and tapers towards its north-west end. It is high, Mount Delphi, near the centre, being 2,150 feet above the sea. The island is fertile and well cultivated, producing oil, grapes, citrons, and other fruits. A quantity of light red wine is exported in vessels belonging to the island, to Constantinople and ports in the Black sea. Chart, 2,672.
Lat. 39° 8' N.
Long. 23° 40' E.

There are no good ports in the island, although during the summer months vessels lie off the town in Skopelos bay (sometimes called Agnontias harbour) on the north-east side of the island, exposed to the winds from that quarter, but which are said not to blow home at that period. The best berth is under the cliffs in the north-west part of the bay with the starboard anchor in from 7 to 10 fathoms, and a hawser fast to the rocks at the foot of the cliffs. Vessels should not anchor here during winter, unless in cases of necessity, as when north-east winds do blow, they send in a heavy short sea. In the inner part of the bay, are the ruins of an ancient mole, but it affords no shelter.

Skopelos, the capital town of the island with a population of 3,779 in the year 1896, stands on a rocky projection and presents an imposing appearance from the sea. To the south of the town, is a fertile plain surrounded by a semicircle of wooded hills. The north-west part of the island is called Glossa, from its resemblance to the shape of a tongue, and contains four villages, the largest being Platani.

Communication.—In addition to the telegraph to all parts of the world, there is steamboat communication with the Peiræus, Volo, and other ports.

Supplies.—Refreshments to a limited extent may be procured, but no water without much difficulty, and then in small quantities.

Staphilis bay, on the south-east side of the island, has anchorage for coasters during northerly winds. Staphilis point on the east side, is of a reddish colour, and at a distance appears like a detached rock. A small supply of water may be procured from a fountain. A road leads

Chart, 2,072.
Var. 5° W.

to the town of Skopelos through a well-cultivated valley, and the journey takes one hour.

Port Panormo and Agonia bay, both on the south-west side of Skopelos island, can be entered by small craft, but the water is deep for anchoring. There is a small creek on the south side of Port Panormo, with 10 fathoms water at the entrance, but within, it is shallow and rocky.

At the head of Agonia bay, is a small nook, where vessels perform quarantine; they moor head and stern. There is a small well of water, which has always 5 or 6 feet in it, and it is said that it never dries. From here to the town of Skopelos, is $1\frac{1}{2}$ hour's walk.

Lat. 39° 4' N.
Long. 23° 41' E.

Bank.—A patch with 6 fathoms on it, lies in the middle of the entrance to Agonia bay; it has deep water round it.

Klima.—Anchorage.—There is good anchorage in about 7 fathoms water, sand and weed, about one-third of a mile from the shore, off the village of Klima, on the west coast of Skopelos, and 3 miles from Guruni head, the north-west extremity, sheltered from all easterly winds. As north and north-easterly winds prevail during summer, this anchorage is available during that period.

Water may be obtained at the rate of about $1\frac{1}{2}$ tons an hour, from a small stream northward of Klima. Boats can lie within twice their length of the beach; the water is about 30 yards within; an engine or a hand-pump may be used, or the water baled into a hose. It will be well to trace the stream up, to see that washing or other impurities do no affect the water.

SKOPELOS CHANNEL.—This channel between Skopelos and Skiathos islands, is free from danger by keeping midway between the islets on either side.

LIGHT.—A *fixed and flashing* light showing a flash *every two minutes* is exhibited at an elevation of 223 feet from a masonry tower 47 feet high on Guruni head; it is visible in clear weather from a distance of 20 miles from the bearing of N. 34° E., through east, to S. 70° W.

Lat. 39° 6' N.
Long. 23° 39' E.

Dasa islet, one mile S.E. of Kasida, and $3\frac{1}{2}$ cables from the shore, is 100 feet high, conical, and wooded to its summit. Off its south-west side is the little islet or rock, Strongylo. The water between the two islets and between Dasa and the shore is deep, but sailing-vessels especially should avoid taking these passages on account of calms, strong and uncertain currents, and impossibility of anchorage.

A rock with a depth of 4 feet over it is situated about 80 yards off the south extreme of Strongylo.

From Dasa islet, round Cape Muti and the southern part of Skopelos, there are no dangers.

Kasida and Plero.—At $1\frac{1}{2}$ miles south-eastward of Praximada, are the two little islets of Kasida and Plero; Kasida has a shoal on its north side, with 6 feet water on it. Plero is one-third of a mile inshore from Kasida, and about half a mile N.N.W. $\frac{1}{2}$ W. from Plero is a $5\frac{1}{2}$ -fathoms patch.

Praximada, the most northern of the islets on the Skopelos side, is small and barren, with deep water all round; the islet lies $1\frac{1}{2}$ miles from the nearest point, and S. $\frac{1}{2}$ W. $3\frac{3}{10}$ miles from Guruni head light-house.

Bank.—At about half a mile N.W. of Praximada, is a rocky patch with $5\frac{1}{2}$ fathoms on it and 13 fathoms close to; in a vessel of heavy draught it should be avoided. Chart, 2 072.
Var. 5° W

KHELIDROMI (HALÓNISOS) CHANNEL.—Teleio point, the south-west extreme of Khelidromi island, is distant 2 miles from Gurto point, the east extreme of Skopelos. Between the two islands, are the islets of St. Georgio and Mikro, narrowing the passage to 7 cables, and rendering it difficult for vessels to pass without a fair wind or steam power. St. Georgio, the larger of the two islets, is next to Skopelos, and from it a shoal with 9 feet water on it, extends westward about one-third of a mile, leaving between it and Skopelos a narrow but clear passage; the shoal will generally be seen. Vessels taking this passage, should keep the Skopelos shore aboard.

The passage between Mikro islet (nearly 2 cables N.E. of St. Georgio), and Khelidromi island, is 7 cables wide, deep and clear. The west face of Khelidromi is one mile north and south, and the shore is the base of Mount Khilia, which rises 1,000 feet immediately over the sea.

Currents.—The currents run strong in both channels, and are much influenced by the winds.

KHELIDROMI (HALÓNISOS) ISLAND (the ancient *Ikos*) is $10\frac{1}{2}$ miles in length north-east and south-west, with an average breadth of $1\frac{1}{2}$ miles, and is 1,590 feet high. It is generally barren and uncultivated, and no water can be obtained. The only village is on a sharp peak, at the south-west end of the island, near the sea. Some Venetian ruins of a fort attest that it was once of sufficient consequence to be defended, but the inhabitants, who in 1896 numbered 594, are amongst the poorest in the Archipelago. The island abounds in rabbits, and there is a plentiful supply of fish.

The site of the ancient town is at Kokino Kastro, on the south-east coast, so called from the deep red colour of the promontory on which it stood, and by which, now, the entrance to the little port may be known. Very faint vestiges, however, remain, as the facility with which the stones of the old town could be removed, rendered it much easier to carry away the stones already prepared, than to quarry others.

Many ancient tombs are on a gentle hill at the back of the site of the town. The burial ground is nearly covered with a thick growth of fir trees of a vivid green, which, contrasted with the bright red cliffs and earth, renders the surrounding scenery attractive.

During the survey of this island by H.M.S. *Bonetta*, in 1847, some silver and bronze coins of Alexander and Philip, and many vases, amphoræ, and sepulchral lamps were found.

Anchorage.—There is no harbour, properly speaking, in the island, though there are one or two limited anchorages with northerly winds, &c.; at Kokino Kastro, and off a low sandy point, on the south-east side of Khelidromi, $1\frac{1}{2}$ miles south-westward of Aspro point, the northern extreme of Peristeri island. A mile west-south-west from Kokino Kastro, is a small bay having 9 and 10 fathoms water in the centre, and a small patch of 5 fathoms in the entrance; a vessel might lie here during a northerly wind.

Port Eiraka.—At the north-east end of Khelidromi, is a narrow creek about half a mile deep, with 8 fathoms water, and no dangers, named Port Eiraka; it is not utilised, and there is no fresh water, but it might be of use as a port of refuge for small craft.

Lat. $39^{\circ} 16' N.$
Long. $23^{\circ} 58' E.$

Chart, No. 2,072.
Var. 5° W

Red and Moro islets.—At $1\frac{1}{2}$ miles eastward from Port Eiraka and near Gregali point, the north-east extremity of the island, are the two little islets, Red and Moro; the latter is about half a mile from Gregali point, and between it and Red islet the water is deep.

The north-western side of Khelidromi island is composed of steep precipices, and the most elevated part of the island is 1,590 feet high, a little within the north-western coast, and about 3 miles from Eiraka point, its northern extreme. There are one or two bays, with two little islets, in the southern part of this side of the island, but nowhere along its whole length is there any anchorage.

PERISTERI ISLAND, $4\frac{1}{2}$ miles in length and 817 feet high, has an irregular coast line, and a large bay on its western side, which nearly divides it into two parts, the southern portion of the island being the larger; the northern part is narrow. At the head of this bay is a small nook, named Port Vasiliko, where small vessels can anchor. There is a small inlet at the south end of the island, fit only for boats.

The island is barren, uncultivated, and has no water.

Peristeri island lies nearly parallel to Khelidromi, from which its south-west end is separated by a deep passage half a mile wide, and its north end by a passage about 2 cables wide. Within the extremes of the island, the area opens out and from the shore of Khelidromi to the head of Port Vasiliko, the distance is 2 miles, but except at Port Vasiliko, and off the sandy point of Khelidromi, $1\frac{1}{2}$ miles south-westward from Aspro point, previously mentioned, the water is too deep for anchoring.

The entrances are quite clear; bound from the northward or eastward, the north entrance may be recognised by Aspro point, which is low and white; vessels keeping in mid-channel may steer in without danger.

Lat. $39^{\circ} 13' N.$
Long. $24^{\circ} 0' E.$

Likorima island, about three-quarters of a mile in length north and south, lies 6 cables eastward of the north end of Peristeri, and in mid-channel between them there are from 54 to 80 fathoms water.

ADELPHI ISLANDS.—Lying nearly parallel to and south-eastward of the south end of Khelidromi, are the Adelphi islands, extending in a north-east and south-west direction, 5 miles. The large Adelphi is one mile in length, cliffy on its east side, 520 feet high, and clear of danger.

Adelphi Pulo is close to the north-eastern side of the large Adelphi, the passage between being very narrow; a large rock lies off its north end.

Cambrian rock, the northern of the group, is only a little above water, with 3 fathoms close to it on the north and south; it lies with the peak of the large Adelphi bearing S.W. by S. $\frac{1}{2}$ S., and is distant three-quarters of a mile from the rock at the north end of Adelphi Pulo, with a clear passage between.

Palir and Gadaro.—The two southernmost islets or rocks of the Adelphi group, small and low, lie S.W. by S. $2\frac{1}{2}$ and $2\frac{3}{10}$ miles respectively from the peak of the large Adelphi island; they rise from shallow rocky ground which extends north and south from each islet. At about one-third of a mile westward of the space between the two, is a rocky shoal with 9 feet water on it. The sea at times breaks heavily over these dangers. Between Palir and the large Adelphi, there is no danger, and the passage is nearly 2 miles wide.

SKANTZURA ISLANDS.—This group, extending 4 miles in a general N.E. by N. and S.W. by S. direction, lies south-eastward of the Adelphi islands, and consists of Skantzura, and five or six small islets or rocks. Skantzura is 3 miles in length, north and south, with an irregular coast line, but no anchorage. A monastery stands on an elevation about one-third from its northern end. Off the north-west face of the island are three small islets, with shallow water extending a short distance northward; between them and Skantzura, is a deep channel a quarter of a mile wide.

Chart, 2,072.
Var. 5° W.

Strongylo islet.—A small round islet called Strongylo, lies three-quarters of a mile westward of the central part of the island, and to the southward near the shore, is the larger islet of Parausa.

Lat. 39° 4' N.
Long. 24° 5' E.

Skandilion.—South-westward of Skantzura, are the two islets of Skandilion, the smaller to the northward; the shallow water which surrounds them extends half a mile to the northward, and they are separated from the southern extreme of Skantzura by a deep passage 6 cables wide.

Koraka.—At nearly one mile S.W. $\frac{1}{2}$ W. of Skandilion is Koraka, the southernmost islet of the Skantzura group; the passage midway between is clear and deep.

Rock.—South-eastward of Koraka, distant half a mile, is a rocky shoal with only 9 feet water on it. Vessels passing southward of the Skantzura group, should give this danger a wide berth; it will generally be recognised by the heavy breakers over it.

PELAGO ISLAND is $4\frac{1}{2}$ miles in length north and south, about $2\frac{1}{2}$ miles in breadth, mountainous, being 1,040 feet high, uncultivated, and without water excepting in the rainy season, and then only in small quantities. A few years ago, the only inhabitants were three monks who resided on the north-east side of the island, with a few goats.

On its south-west side, is the island of Pelerissa, at the entrance of a deep bay, but there is no safe anchorage, except inside a small yellow islet in the north corner of the bay, E.N.E. of Pelerissa island. The anchorage being very limited, is only fit for small vessels, and the anchor should be ready to let go in an instant; the western entrance is the best.

In steering for this anchorage, a deep bight or bay with a small plain at the head of it will be seen on the starboard hand, and it would appear to a stranger as a fit place to anchor, but the bottom is treacherous and not to be trusted; the bay should not be resorted to, except in case of necessity.

Pelago channel.—The passage between Khelidromi and Pelago islands is clear, deep, and 3 miles between Moro islet and Panagia point, the southern point of the bay just mentioned.

Port Planedhi, on the north-east side of Pelago island, is nearly a lake, having 5 to 9 fathoms water, mud bottom, with two arms, one to the south-west, the other to the south-east. The entrance is only 90 yards across at the narrowest part, and $3\frac{1}{2}$ fathoms is the least depth of water. It can only be entered by a sailing-vessel with a fair wind. A heavy swell sets into the outer part of the entrance during northerly winds, but in the port, the water is always smooth, and a vessel could refit or heave down; at one time it was much resorted to by pirates. A few goats may be obtained, but no water.

Plan on 2,072

IURA ISLAND is 4 miles in length north and south, a little more than one mile in breadth, and its northern end tapers to a point. It has neither harbour nor roadstead, is uninhabited and almost inaccessible. Large numbers of wild goats fatten well on the scanty herbage which clothes the sides of the precipitous hills of which the island is composed.

Chart, No. 2,072.
Lat. 39° 22' N.
Long. 24° 10' E.

Chart, 2,072.
Var. 5° W.

At about $1\frac{1}{2}$ miles E. $\frac{1}{2}$ N. from the north extreme of Iura, is a rocky bank, having from 10 to 15 fathoms water on it.

Iura channel.—The three islets named Prásson, Kubi, and Papu, eastward of Kento point, the north-east extreme of Pelago, are steep-to. The nearest point of Iura is distant from Pelago nearly 2 miles, and the channel is deep on either side of the islets.

Current.—The currents in the channel generally run according to the direction and force of the wind.

Lat. $39^{\circ} 20' N.$
Long. $24^{\circ} 19' E.$

PIPERI ISLAND, bearing about E.S.E. from the centre of Iura, and distant 6 miles, is $2\frac{1}{2}$ miles in length north and south, and its average breadth is less than one mile. It is encompassed by inaccessible precipices, has deep water all round, and possesses no shelter even for a boat. Between Piperi and Iura, there are no dangers.

PSATHURA ISLAND, the most northern of the Skopelos group, is one mile in length north and south, and only a few feet above the sea. It has a small well of water near its south end, and some remains of ancient fortifications at its northern extremity. Its western side is steep-to, but its eastern side is bordered by a shoal to the distance of about 4 cables, which continues round the south end of the island; it is resorted to by fishermen.

LIGHT.—On Psathura island, and 140 yards from its northern extremity, is a cylindrical masonry tower 84 feet high with dwelling attached, from which is shown at an elevation of 129 feet, a *white fixed* light, visible from a distance of 18 miles in clear weather except when obscured by the islands southward of it.

Muia.—The little islet of Muia lies about half a mile southward of Psathura, and the ground between them is foul, rocky, and uneven, so that although the depth midway is from 3 to 7 fathoms, vessels should not pass through. Muia is surrounded by rocky shallow ground, and at one-third of a mile S.W. by W. $\frac{1}{4}$ W. from it, is a rock with less than 6 feet water on it. The passage between this rock and the north point of Iura is $2\frac{1}{2}$ miles wide, deep and clear.

Caution.—The Current with northerly winds and calms sets strongly towards the Psathura islets, and has been the cause of many disastrous wrecks.

Chart, 1,086.

VENUS BANK with a depth of 44 fathoms over it and situated in lat. $39^{\circ} 42' N.$, long. $24^{\circ} 32' 35'' E.$, was reported by H.M.S. *Venus* in 1907.

Chart, 1,085.

GULF of SALONIKI.—From the Skopelos or Thessalian islands, the Gulf of Saloniki extends in a general north-north-west direction about 86 miles, and then north-eastward 10 miles farther to the town which gives its name to the gulf. The country on the western side of the gulf exhibits a magnificent range of mountains, which includes Mount Pelion, 5,316 feet high, rising over the head of the Gulf of Volo; Mount Ossa, 6,458 feet; and farther north-westward, Mount Olympus, which reaches 9,754 feet above the sea. On the eastern side of the gulf, the land is also mountainous, though of less elevation than the summits on the western side.

The water throughout the gulf is deep, except within about 20 miles of the town, where there are anchoring depths in every part.

There are no off-lying dangers, but several low projecting points, as well as the low shore on the northern side of the head of the gulf, require caution in passing.

Current.—A strong current has been observed setting out of the gulf in March and April, probably owing to the melting of the snow and the freshets from the river. Chart, 1,085.
Var. 5° 20' W.

COAST.—From Cape Promiri in Thessaly (page 150), the shore trends north-north-westerly nearly 20 miles to Cape Pori, a rugged and slightly salient point with a rock close to its base called by the same name; the coast between is nearly straight, backed by high land, and all along clear of danger. At nearly 3 miles south-eastward of Cape Pori, is a beach and the village of Khorephto. Lat. 39° 13' N.
Long. 23° 21' E.

About a mile back from Khorephto, is the village of Zagora, a telegraph station.

Mount Pelion rises majestically 4 miles south-westward of the cape, in a broad and rounded outline; when viewed from the southward, it shows two summits at some distance from each other, the depression between them being so slight, as to give it the appearance of table-land.

Between Cape Pori and Cape Kissobo, 21 miles further north-west, the coast forming a slight bend, is high and steep-to. Cape Kissobo is a prominent lofty headland; Mount Ossa, 8 miles westward of the cape, is steep, terminating in a cone. At 8 miles north-westward of Cape Kissobo, is the entrance to Salambria river; the coast between, is high and rocky, and rises abruptly from the sea, and about midway between is the village of Karitza, about 500 feet above the sea, which shows conspicuously on the face of the steep mountain.

At about 2 miles south-east from the entrance to Salambria river, the rocky coast terminates in a bluff point, and the mountain range falls a little back, bordered by a narrow belt of low land with a sandy beach, which continues to Leftoro-khori cliffs, 9 miles from the entrance to Saloniki bay.

Tzai Agzi.—Anchorage.—In the small and shallow bay half a mile north-west of the bluff point just mentioned, is the little village of Tzai Agzi, containing about 50 houses, and close to a stony beach. The anchorage off the village is good during fine weather, and small vessels that frequent the place, anchor in 7 fathoms, about one-third of a mile from the beach. There are 10 fathoms water, sand and mud, about two-thirds of a mile from the shore, with Cape Kissobo in line with the bluff point south-east of the village, and the centre of the village bearing about S.W., the soundings thence decrease gradually to the shore. Lat. 39° 52' N.
Long. 22° 45' E.

Telegraph.—The village of Tzai Agzi is a telegraph station.

Salambria river (ancient *Peneus*) reaches the sea at this part of the Gulf of Saloniki through the celebrated vale of Tempe, a narrow rocky defile 5 miles in length, between the mountains of Olympus and Ossa, and where there is often only room for a traveller and the river to run side by side. The Salambria drains nearly the whole of Thessaly, and its course is about 110 miles long.

Anchorage will be found off the skala, near the mouth of the Salambria, in 9 or 10 fathoms, mud. Water may be obtained from the skala. The seine can be hauled near the mouth of the river, and soles, ray, and mullet caught. In the river, the stream is too strong for the seine, as it sweeps the net and boats to sea.

Platamona point and shoal.—About 3 miles northward of Salambria river, is Platamona point, low, and surrounded by shallow water, which extends nearly one mile from the shore; at the extremity

SALONIKI GULF. E. SHORE.



SALONIKI GULF. W. Shore.



of the shoal there is only 4 fathoms. Vessels should give the point a berth of $1\frac{1}{2}$ miles in passing, or keep the high land of Cape Pori open eastward of Cape Kissobo, S.S.E. $\frac{1}{4}$ E., which will clear the shoal. Chart, 1,085.
Var. $6^{\circ} 30'$ W.

The town and fort of Platamona, 6 miles N.W. by W. from Platamona point, consists of a large and irregular group of buildings surrounded by a wall standing upon a rocky height overhanging the sea; a good mark for this part of the coast. A small garrison is maintained here. A stream runs into the sea on its south side.

Boundary.—The boundary between Greece and Turkey commences at the mouth of the River Potamul, about a mile to the north-westward of Platamona point.

Caution.—North and east of Platamona point, the Surveys on which chart No. 1,085 is founded, are imperfect.

COAST.—Atherida point is about 25 miles North from Platamona point; the coast between at the base of Mount Olympus, forms a bend $6\frac{1}{2}$ miles deep, and may be approached to a moderate distance, there being no off-lying dangers. The skala of Katarina is $8\frac{1}{4}$ miles southward of Atherida point, but at times the surf breaks heavily on the beach, and then there is no landing. The town of Katarina stands in a narrow plain between Olympus and the sea, and contains about 300 houses which are surrounded with trees. Lat. $40^{\circ} 22'$ N.
Long. $22^{\circ} 41'$ E.

MOUNT OLYMPUS.—The summit of this majestic mountain which is 9,754 feet high, shows a wide surface of bare light-coloured rock, capped with snow during the greater portion of the year. The broad side of the mountain, when seen from the eastward, presents a series of abrupt precipices of great height, broken at intervals by deep ravines, richly clothed with forest trees.

Atherida point is low and projecting, and with the exception of a rock close-to, has no danger off it. Plan, 2,070. Between it and Panomi point opposite, the gulf narrows to a width of $10\frac{1}{2}$ miles. From Atherida point, the western shore of the gulf with beach and cliff, trends in a general N.N.W. direction $6\frac{3}{4}$ miles to the skala of Leftoro-khori, where there is good landing and anchorage. The village of Leftoro-khori is on an eminence $1\frac{1}{2}$ miles from the sea.

Caution.—The water off the skala is reported to be much shoaler than shown on the chart. In 1895, H.M.S. *Sanspareil* anchored in $7\frac{1}{2}$ fathoms, with the skala bearing West, distant $2\frac{7}{10}$ miles, whence the soundings decreased gradually to the shore.

Vistritza river (ancient *Haliacmon*).—From the skala of Leftoro-khori, at the termination of the cliffy coast, the north-western shore of the Gulf of Saloniki trends north-eastward $2\frac{1}{2}$ miles to the principal mouth of the Vistritza river and Khoma fishery; the shallow banks at the outlets of this river have extended a considerable distance in a south-easterly direction since the Survey of 1850.

Vardar river (ancient *Axius*) rises on the eastern slope of the Chardagh, on the frontiers of Albania and Macedonia, and is joined by several streams in its course to the sea, which is about 160 miles long. The delta forms a low point or spit, the south-east extremity of which bears approximately East, distant 7 miles from Khoma fishery, Vistritza river, the low broken shore between these places, receding northward about $1\frac{1}{2}$ miles from the line joining them. The shoal water off the

Plan. 2,070.
Var. 5° 30' W.

mouth of Vardar river and the light-vessel, are alluded to in describing Saloniki bay, (*see* page 163). Before this is done, the eastern side of the gulf will be described.

Chart, 1,085, 426.
Lat. 39° 57' N.
Long. 23° 22' E.

KASSANDRA POINT (ancient *Posidium*), on the eastern side of the entrance to the Gulf of Saloniki, is a long low point projecting to the south-west, and when first seen appears like an island. From the point eastward, the land rises to the height of 1,078 feet, and terminates in Cape Paliuri (page 165), the western entrance point of the Gulf of Kassandra, distant 18 miles; the cape is low as well as the land for some distance westward of it. From Cape Paliuri, the high land of Sithonia peninsula separating the Gulfs of Kassandra and Monte Santo, appears to the eastward, and beyond it, the elevated cone of mount Athos.

LIGHT.—At two-thirds of a mile within the extremity of Kassandra point, is a white stone tower from which is exhibited at an elevation of 72 feet above the sea, a *white flashing* light, *every minute*, visible in clear weather from a distance of 13 miles; the eclipses are not total within 8 miles.

Anchorage.—Anchorage may be obtained either north-westward or south-eastward of Kassandra point, according to the wind. At about $1\frac{1}{2}$ miles eastward of the point, abreast a valley, and 6 cables from the shore, there are 13 fathoms water, fine sand and shells. From this position, Kassandra lighthouse bears W. by N. $\frac{1}{2}$ N., and a small hut near a beach, at the entrance to the valley, N.N.E. The water shoals quickly to a depth of 3 fathoms, sand and weeds, at 2 cables from the shore. This anchorage affords shelter from N.W., round by north, to N.E.

H.M.S. *Swiftsure*, in March 1877, anchored in 12 fathoms water, mud bottom, at about $1\frac{1}{2}$ miles northward of the point. The lighthouse bore S. 22° W., and the southernmost of four mills in the valley, N. 85° E. On sounding round the ship, the bottom was found uneven, shoaling suddenly to $4\frac{1}{2}$ fathoms, at $1\frac{3}{4}$ cables inside the ship. The stern swung from 20 fathoms into $5\frac{1}{2}$ fathoms.

Chart, 1,085.

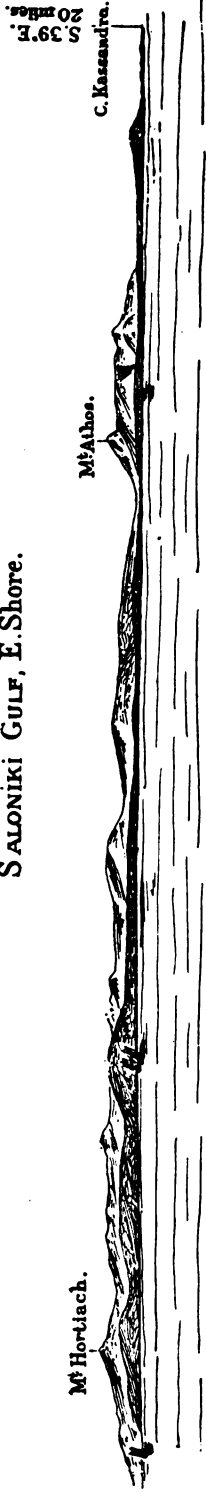
Eastern shore of the gulf.—When proceeding up the Gulf of Saloniki, there are no isolated off-lying dangers; the shore between Kassandra and Panomi points, a distance of 33 miles, forms a bend a little more than 9 miles deep near the low isthmus of Potidæa. The narrowest part of this isthmus, less than two-thirds of a mile broad, is $14\frac{1}{2}$ miles northward from Kassandra point. The central part of the shore between the point and the isthmus, is bordered by shoal water; the coast from the isthmus to Panomi is also fringed by shoal water, which, under the depth of 5 fathoms, extends off an average distance of half a mile, and behind it is high mountainous land.

Lat. 40° 22' N.
Long. 22° 55' E.

Panomi point is very low, projects from a plain, and is surrounded by a rocky shoal which extends to the south-west about three-quarters of a mile from the lighthouse, and requires great caution in passing. Anchorage will be found on either side of the point, and there is a village on the plain. This point, with Atherida point on the opposite shore, narrows the gulf to $10\frac{1}{2}$ miles.

LIGHT.—At 394 yards within the extremity of Panomi point, is a mast on a white house, from which is exhibited at an elevation of about 52 feet above the sea, two *white fixed vertical* lights, visible from a distance of 10 miles in clear weather.

SALONIKI GULF, E. Shore.



Plan, 2,070.
Var. 5° 20' W.

CAPE KARA, with Vardar spit, $2\frac{1}{10}$ miles westward of it, form the entrance points of Saloniki bay. This cape, on which there is a large earth-work fort and lighthouse, is a clifty bluff of tableland, 70 to 100 feet high, rising from the low shore which terminates in Tuzla point, a low spit of dark sand almost level with the water, which is difficult to distinguish excepting when north or south of it; about $1\frac{1}{2}$ miles on the south, within the sandy shore between the cape and Tuzla point are salt-pans, one mile in extent north and south. Tuzla point bears N.W. by N. $\frac{3}{4}$ N., distant nearly 7 miles from Panomi point, the shore between forming two bays $1\frac{1}{2}$ miles deep, fringed with a shoal bank for a distance of about one-third of a mile. From Tuzla point, the shore northward round Cape Kara is bordered by shallow water, which from the latter, extends westward nearly three-quarters of a mile before the depth of 5 fathoms is reached.

Vespasian shoal, on the edge of this shallow water, composed of sand and loose stones, has 14 feet water on it, with 20 to 24 feet close to it, and 17 feet between it and the shore, and is situated about $6\frac{1}{2}$ cables S.W. $\frac{1}{4}$ W. from Cape Kara lighthouse.

Caution.—As many vessels have grounded on the shallow ground surrounding Cape Kara, great attention should be given to the following directions:—Vessels entering or leaving Saloniki bay, should not round the cape or approach the coast between it and Tuzla point, within a distance of one mile, nor stand into less than 10 fathoms water.

Lat. 40° 30' N.
Long. 22° 51' E.

LIGHT.—A *white* and *red fixed* light is exhibited at an elevation of 85 feet from a white stone tower on Cape Kara; it should be visible in clear weather from a distance of 10 miles in the *white* sector, and 6 miles in the *red*. For sectors *see* Light List, Part V., and chart. The *white* light in sight clears Tuzla point, but the foregoing precaution must be taken, to keep westward of the shallow water surrounding the cape.

The land at the back of the lighthouse is high with scattered trees.

SALONIKI BAY from the entrance, to the town, trends north-east $10\frac{1}{2}$ miles with an extreme breadth of 6 miles, and has depths over muddy bottom varying from 16 to 7 fathoms.

From Cape Kara, the broken clifty land trends eastward about 4 miles, when a low shore continues round a deep bight to within $1\frac{1}{2}$ miles of Mikra point.

Mikra point, clifty, with a battery on it, should not be approached too closely, as depths under 5 fathoms extend nearly half a mile from it. Near the shore, at $1\frac{2}{10}$ miles to the north-eastward of Mikra point are a mill and chimney, which are very conspicuous on a clear night.

From Mikra point, the eastern low shore continues in a north-north-easterly direction for $2\frac{3}{4}$ miles, with gardens and vineyards to the south corner of the town of Saloniki. Here, is a high circular tower known as South bastion, making a conspicuous mark to vessels approaching the town, and for anchoring. Close to this low shore, and one mile from South bastion, are two chimneys, E.N.E. and W.S.W., 90 yards from each other, the eastern one being some 20 feet the taller.

VARDAR BANK LIGHT-VESSEL.—A light-vessel is moored half a mile south-east from the dry end of the spit formed at the mouth of the Vardar river. At a height of 49 feet above the water, two vertical *red fixed* lights are exhibited, visible in clear weather from a distance of 6 miles. The light-vessel is painted red

and moored in 7 fathoms, bearing W. $\frac{1}{2}$ N., distant $2\frac{1}{2}$ miles from Cape Kara lighthouse. There are 10 fathoms water, one cable eastward of the light-vessel; 2 cables N.W. of the light-vessel, there is only one fathom.

Plan, 2,070.
Var. $5^{\circ} 20' W$

North-western shore.—From the end of Vardar spit, the low, marshy, broken-up shore of Saloniki bay trends in a northerly direction for 3 miles, and then in a general north-east by east direction 10 miles to the western side of the town. The shore is cut up by numerous inlets and lagoons, the outlets of several streams which form extensive fisheries. At times, the muddy water from the Vardar river and outlets of the lagoons, reach nearly over to Cape Kara; these features, and the almost constant mirage over the low irregular shore, have led to many accidents.

Naziki bank.—Extensive flats front this shore, the most dangerous being Naziki bank, the outer edge of which, with depth of 5 fathoms, bears N.E. $\frac{1}{2}$ E. distant $4\frac{1}{10}$ miles from Vardar bank light-vessel.

Between Naziki bank and the town, two other extensive banks stretch off, the outer ends with depths of 2 fathoms bearing respectively S.W. $\frac{3}{4}$ W. $3\frac{1}{2}$ miles, and W. by S. $\frac{1}{4}$ S. 2 miles from the south-east end of the breakwater. Between the north-eastern of these three banks and the town, the 5 fathoms line approaches the shore to an average distance of 3 cables.

Caution.—As great changes in depths are reported in all parts of Saloniki bay, great caution must be observed in approaching the edges of the shore banks, especially those on the north-west side.

Harbour.—A harbour with a depth of 28 feet maintained by dredging is formed by a quay 437 yards long, with a mole 218 yards long at each end, and an island breakwater, 617 yards long facing it.

There is a 16-ton steam crane on the western mole.

Lights.—At each end of the breakwater two *red fixed* lights, placed vertically, are exhibited; they are unreliable and it is reported that sometimes only one light is shown at each end.

Signals.—A green flag is hoisted at the outer angle at the East mole when entry to the harbour is permitted, and a red flag when it is prohibited.

Chimneys.—About 7 cables westward of the western mole, and close to the shore, are situated two conspicuous chimneys about 100 yards apart; the western and taller is close to the east end of Olympus brewery, which extends westward to within about 100 yards of the slaughter-house.

Shoal.—A shoal of 4 fathoms, having irregular soundings of from $5\frac{1}{2}$ to 7 fathoms at a distance of 2 cables round it, lies half a mile W. $\frac{3}{4}$ S. from the south-east end of the breakwater.

The Anchorage is anywhere off the town clear of the above shoal in from 7 to 9 fathoms, good holding ground, but exposed to south-west winds. With these winds, a sea soon gets up, and landing is then attended with difficulty except inside the harbour. Winds from the north-west, blow with great violence. The usual anchorage for vessels-of-war is off the South bastion, and abreast the British Consul-General's house, in 8 or 9 fathoms.

When leaving the anchorage, and obliged to beat down the bay, bearings of South bastion and Mikra point, are capital marks to check the vessel's position in standing towards the north-west side of the bay, until well down to Cape Kara, bearing in mind the report, that the low broken shore on that side and the soundings off it have altered very much of late years.

Piers.—There are six landing piers, five south and one north of the harbour.

Plan, 2,070.
Lat. 40° 37' N.
Long. 22° 58' E.
Var. 5° 20' W.

SALONIKI (ancient *Thessalonika*), on the acclivity of a steep hill, at the north-eastern extremity of the bay, is about 4 miles in circuit, and ascends from the sea in a somewhat triangular form, having high walls on the land sides, and enclosing the citadel above, which has seven towers. The walls being whitewashed, make the town conspicuous from the sea, so that it is seen from a great distance; the architecture of the lower part of the walls is Cyclopean and Hellenic, while that of the upper part, dates from the middle ages; the walls are built of brick, with ancient fragments intermixed. All the fortifications on the sea front have been taken down, and a sea wall and quay built.

The citadel called by the Turks "Seven towers," is the old Acropolis; within which, are the remains of some very antique pillars, and of a triumphal arch erected in the time of Marcus Aurelius. Domes and minarets are numerous, and the town being surrounded by plantations of cypress and other evergreens and shrubs, has an imposing appearance contrasting greatly with its indifference within. The Custom-house, a fine large building, is at the north-west end of the quay.

Population.—The inhabitants of Saloniki amount to about 150,000, of whom about half are Jews, being the descendants of those expelled from Spain at the beginning of the 16th century. The remainder are mainly Greeks and Turks, but include about 8,000 Bulgarians and 300 English.

Consul.—A British Consul-General resides here.

Trade.—The principal exports are skins, silk, flour, cattle, tobacco, maize, barley, oats, rye, wheat, manganese, opium, &c., and were valued in 1906-7 at 1,711,000*l.*; the principal imports are coffee, cotton, sugar, hardware, cotton and woollen goods, and were valued in 1906-7 at about 3,225,000*l.*

Shipping.—In 1906, 924 steam vessels of 868,134 tons, and 2,214 sailing vessels of 58,998 tons entered the port of Saloniki; of these, 58 steam vessels of 96,799 tons were British.

Disease.—The city is subject to malaria, and the whole country at the head of the gulf is unhealthy.

Communication.—Frequent and regular steamship communication is kept up with Marseilles, Venice, Constantinople, Smyrna, Volo, and other principal Mediterranean ports.

Railways.—There is communication by rail with Monastir, Uskup, Nisch (for Vienna), Dédé Agatch, Adrianople, Constantinople, Belgrade, &c.

Telegraph.—There is telegraphic communication with the Archipelago, and all parts of the world. A submarine cable is laid along the middle of the bay, to Lemnos island, the landing place and stone cable-house being situated near the western pier, and about a third of a mile eastward of Olympus brewery; vessels should avoid anchoring over it.

Supplies are plentiful and cheap, with the exception of fish, which being farmed out, and heavily taxed, is dear.

There is excellent shooting in the neighbourhood, including pheasants, wood-cocks, wild-fowl, &c.

Coal.—About 21,000 tons of coal are imported annually, 7,000 tons being usually in stock. There is a depth of 26 feet alongside the quays. Coaling is performed by lighters carrying about 30 to 40 tons each, of which there are about 50.

Water.—Excellent water can be obtained from hydrants on the quay; there is a water tank holding 20 tons for the supply of shipping.

Meteorology.—For result of observations extending over several years at Saloniki, see Table, Appendix, page 341.

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GULF of KASSANDRA.—Eastward of the entrance to the gulf of Saloniki, are three remarkable peninsulas, each projecting about 25 miles to the south-east, nearly parallel to each other, and embracing the Gulfs of Kassandra and Monte Santo. Of these peninsulas, the south-western, named Pallene or Kassandra, is the most fertile, the two others having in all ages been rugged and clothed with forests.

Charts, 1,085, 1,086.
Var. 5° W.

The Pallene peninsula, united to the main on the north by the Isthmus of Potidæa (a narrow low neck), terminates in Cape Paliuri (page 160), and forms the south-western side of the Gulf of Kassandra. The village of Pinaka, formerly Pallene, from which the peninsula takes its name, is situated at the north end of the peninsula and half a mile south of ancient Potidæa. A ruined rampart, with turrets, stretches from shore to shore, and is called the gate (*Porta*) of Kassandra. Hellenic blocks of the wall which defended the once flourishing city of Potidæa, are still to be seen.

Sithonia, the middle peninsula, is mountainous, the most elevated part which is near the centre, being 2,596 feet high; the coast is irregular with scattered rocks here and there, and deep water close-to. It terminates on the south in Cape Drepano, a conical hill 889 feet high, and separates the Gulf of Kassandra from the Gulf of Monte Santo.

The Gulf of Kassandra, at the entrance between the two peninsulas, is about 5 miles in breadth, widens within to 12 miles, and extends in 26 miles to its head, where anchorage may be found, but elsewhere the water is generally too deep.

Current.—H.M.S. *Edinburgh* while on her passage from Saloniki to Thaso island in October, 1892, experienced south of the entrances to the Gulfs of Kassandra and Monte Santo, a westerly set of half a knot per hour. When $1\frac{1}{2}$ miles off Cape Laura, Akte peninsula, a current to the south-west at the rate of $1\frac{1}{2}$ knots per hour was observed.

Caution.—With the exception of the island of Lemnos, the Surveys on which chart No. 1,086 is founded, are imperfect.

Kelpho islet.— $7\frac{1}{4}$ miles North from Cape Nikolo (the north point of the eastern extreme of the Pallene peninsula), is the little islet of Kelpho separated from the eastern shore of the Gulf of Kassandra, by a passage $2\frac{1}{2}$ miles wide, and upwards of 60 fathoms deep.

Lat. $40^{\circ} 4' N$.
Long. $23^{\circ} 45' E$.

Port Kupho.—This little port, on the eastern side of the entrance to the Gulf of Kassandra, extends in, east-north-east half a mile, and then north-north-west about the same distance to its head, where it is about $1\frac{1}{2}$ cables wide. The depth of water, is from about 35 fathoms at the entrance, to 5 fathoms at its head, sandy bottom. The entrance is between high bold land on either side, and $1\frac{1}{2}$ cables west-north-west from the western entrance point, is situated the islet of Praso, surrounded by rocks above and below water. (See view on chart No. 1,679.)

Plan on 1,679.

Immediately north-eastward of the west entrance point, is a bay nearly 2 cables deep. From this bay, the shore trends eastward about 4 cables to another point whence the port runs northward. The latter point is foul for one-third of a cable, and the point 3 cables eastward of it on the opposite shore is foul for two-thirds of a cable. There is nothing in the way in entering this little port but the shoals just mentioned, and its northern part is land-locked. The high cone of Mount Athos N. $62^{\circ} E$., seen over the lower land of the Sithonia peninsula, leads to the entrance. (See the same view.)

Should Mount Athos be in the clouds, there is a one-storied white-washed house (used as a barrack) standing on the east side of the port,

Plan on 1,679.
Var. 5° W.

Chart, 1,086.

which is seen as a white square spot for a considerable distance. This house bearing E.N.E. leads also to the entrance of Port Kupho.

The GULF OF MONTE SANTO is very similar to the Gulf of Kassandra, but wider at the entrance. It is bounded on the south-west by the peninsula of Sithonia, and on the north-east by that of Akte; the entrance between Skepe reef on the west, and the base of Mount Athos, is about 13 miles wide, and thence the gulf runs in 26 miles to its head. The water is everywhere deep, and there are no off-lying dangers.

Plan on 1,679.
Lat. 40° 1' N.
Long. 24° 2' E.

Skepe reef.—At about 6 cables southward of Adolo point, the south entrance point of Port Sikia, a rocky ledge extends about a third of a mile from the shore, and forms a tongue to the southward parallel to the coast for three-quarters of a mile. At about 2 cables from its north-east shoulder, is a large rock or islet; other rocks are uncovered, and elsewhere there are from 12 to less than 6 feet water on it. Within this rocky tongue called Skepe reef, there are 7 and 10 fathoms water, leading to a small cove. The reef skirts the most eastern part of the Sithonia peninsula, and should be given a fair berth in passing.

Port Sikia on the south-western side of and near the entrance to the Gulf of Monte Santo, is $1\frac{1}{2}$ miles deep, having from 16 to 5 fathoms water, sandy bottom. Cape Sikia, the north point of entrance, is foul, and south-west of it is a little islet called Apastro, with sunken rocks extending a cable south-eastward. The passage into the port, between these rocks and Adolo point, is clear and about 7 cables wide. The shore at the head of the port is a beach, and $2\frac{1}{2}$ miles westward from the north end of this beach is the village of Sikia (the ancient *Singus*), which gives its name to the bay.

Chart, 1,086.

Dangers.—Rikha point, about 3 miles northward of Port Sikia, has a reef extending from it, and 2 miles farther north-west is a little projection to the north, surrounded by an extensive shoal, and called Shoal point; a rock lies also at the foot of Trako head, $3\frac{1}{4}$ miles north-westward of the latter point. These dangers should be given a wide berth in passing.

Plan on 1,679.

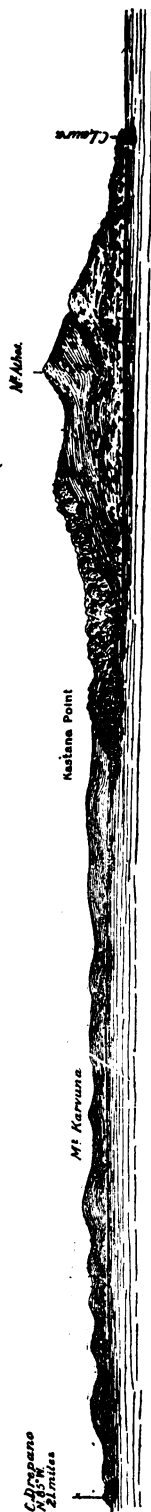
Port Dimitri.—On the south-western side of the Gulf of Monte Santo, and about $10\frac{1}{2}$ miles from Rikha point, is the island of Dimitri, $1\frac{1}{4}$ miles in length north and south, and three-quarters of a mile in breadth, irregular in shape, with rocks extending about a cable from its south-eastern point, the outer of which is above water.

Port Dimitri is formed between the island of that name, and the low shore of a bay. The south passage into the port is between the rock above water, just mentioned, extending from the south-eastern point of the island, and a little islet with sunken rocks on its east and west sides, lying nearly midway between it and the mainland shore.

In the channel between these rocks, there are 14 fathoms of water, but immediately within, it shoals to 4 fathoms; farther in, there are depths of 5, 6, and 10 fathoms, which increase northward to 22 fathoms, and decrease again to 5 fathoms in the northern passage between the two islets lying between the north end of Dimitri island and the main shore. The depths in the south part of the port, are the most convenient for anchoring; here, the widest part of the port is nearly half a mile in breadth.

Coast.—The shore of the gulf at its head from Port Dimitri to Problaka bay appears to be rugged and steep-to, and to afford no anchorage.

ENTRANCE OF THE GULF OF MONTE SANTO.



Plan on 1,647.
Lat. 40° 21' N.
Long. 23° 54' E.
Var. 5° W.

Problaka bay.—**Mulari island**, in the north-east corner of the Gulf of Monte Santo, is nearly $3\frac{1}{4}$ miles in length north-west and south-east; its north-western side is $1\frac{1}{4}$ miles long, whence it tapers to the south-east. Shallow patches, upon which there are two little islets, lie about a third of a mile northward of the western end of the island. The western one is about 30, and the other about 18 feet high; a shoal with 2 fathoms water on it, lies 3 cables north-eastward of the latter, and about the same distance from Mulari island. A cluster of islets and rocks lie close off the south-eastern extreme of the island, to which they are united and to each other by shallow rocky ground.

These islets reach half way to a slight projection of the main shore, on which there is a square tower called Pyrgo. From this point a bank under the depth of 3 fathoms, extends westward 4 cables and south-westward 3 cables.

Mulari island fronts the Isthmus of Xerxes on the north, from which it is distant about a mile.

Shoal.—An isolated rock with $2\frac{1}{2}$ fathoms water on it, lies in the middle of the passage between Pyrgo bank and the north-eastern islet of Mulari. The rock bears East 3 cables from the south extreme of this islet. There is a narrow passage on either side of the rock, and depth of from $3\frac{1}{2}$ to 5 fathoms.

Cygnets rock, a pinnacle with one fathom of water on it, and 5 to 7 fathoms at the distance of 30 to 40 yards around it, lies W. by N. $\frac{1}{4}$ N., 4 cables from the north extremity of the north-east islet.

The Isthmus of Xerxes, which unites the Akte peninsula to the main, consists of level land and low hills, from which the land rises and forms a steep central ridge which runs south-eastward. The site of the Xerxes canal is a hollow between natural banks, and several artificial mounds and remains of walls can be traced along it. Its length across the isthmus is about $1\frac{1}{4}$ miles; the hills on its western side range from 350 to 500 feet high, and those immediately on the east to 170 feet.

Anchorage.—The shore on the south side of the isthmus forms a slight curve between which and Mulari island there is anchorage on a sandy bottom, but the water is deep. Large vessels should not anchor in less than 25 or 20 fathoms, at about 3 cables from the beach. The anchorage is northward of Fearless point, the north-eastern part of Mulari island, and eastward of Spratt point, a sandy projection at the western extreme of the bay.

AKTE, or MONTE SANTO PENINSULA.—The north-eastern of the three peninsulas, the ancient *Akte*, is rugged, and intersected by numerous ravines; the land rises abruptly from the isthmus of Xerxes to about 300 feet, and for the first 12 miles to the south-east it is nearly level, about 600 feet high, and for the most part thickly wooded. It then becomes mountainous, the heights being 1,708 and 2,195 feet; on the northern slope of the latter elevation, and at a nearly equal distance from the north-east and south-west coast, amidst vineyards and gardens, is the town of Karies, the capital of the peninsula. From the last-mentioned height, a rugged broken country, with dark forests, extends south-eastward to the foot of Mount Athos, an isolated cone of white limestone, which rises in solitary grandeur 6,349 feet above the sea.

Mount Athos, as well as the peninsula from which it rises, is now known throughout the Levant as the Holy Mountain or Monte

Chart, 1,086.

Santo, from the number of monasteries and chapels which are scattered over it. These semi-fortified monasteries, of which there are about twenty, of different degrees of magnitude and importance, with the farms attached to them, are spread over the whole peninsula. Most of them were founded during the Byzantine Empire, and some of them trace their origin to the Empress Helena, the mother of Constantine the Great. Each of the different nations belonging to the Greek Church has one or more monasteries of its own, and they are visited periodically by pilgrims from Russia, Servia, Bulgaria, Greece, Asia Minor, Constantinople, &c.

Chart, 1,086.
Var. 5° W.

Russico.—A monastery known as Saint Pantaleimon, is situated on the south-west side of the peninsula, nearly 10 miles from Cape Santo. It was founded for Russians in the 12th century, but now the majority of the brethren are Greeks. The monastery itself is enclosed by a wall, which has only one gateway, but the workshops, storehouses and dwelling-houses surrounding it, and between it and the water's edge, give it the appearance of a town. It is increasing in size, each year. The white walls of the monastery can be seen a long way off. Below it, is a small bay with a depth of 20 fathoms, at 80 fathoms from the north shore. In order to anchor in this depth, bring in line the north end of the monastery (on the east side of the bay), the house with the attic on the hill above it, and a conical hill rather more elevated above the monastery than the others. On this line a steam-vessel should proceed slowly, and as soon as the abrupt headland nearest the monastery pier begins to cover the house standing behind it, the anchor should be let go. The conical hill is always easily distinguished.

The little bay is reported snug enough excepting in southerly winds; several small craft are usually at anchor in it, and among them, the steam-launch belonging to the monastery.

The inhabitants of the monastery say that strong north-west winds occur, though very seldom; during winter, however, north-east winds mostly prevail, and are sometimes very violent.

Mooring buoys.—In 1894, there were two mooring buoys a little west of the monastery, the outer one being placed in 22 fathoms of water a little over one cable from the shore, the other nearer the shore. These buoys were placed by the Russian Navigation Company for their vessels to make fast to, head and stern. With permission of the monks, H.M.S. *Imogene* secured to the outer of these buoys in 1899.

The Russian steamers call here fortnightly, both ways, on their passage between Odessa and Saloniki.

Daphni Quarantine station.—Kastana point on the south-west side of Akte peninsula, is about 8 miles from Cape Santo, and 2 miles southward from Russico. About half a mile northward of Kastana point, is the Quarantine station of Daphni, at which, vessels with pilgrims to the various monasteries report. The doctor is not always present at the station, being frequently at Karies, 2 miles distant, but he is generally at Daphni when a vessel is expected.

Lat. 40° 12' N.
Long. 24° 14' E

There is a small mooring buoy off Daphni about 1½ cables from the landing.

Telegraph.—Daphni is a telegraph station.

Anchorage will be found in one or two other bays, off the monasteries; the best on the north-eastern side of the peninsula, is Iheron bay, 1½ miles eastward of Karies, in 9 fathoms, sand, with the tower of the monastery S.W. ¼ W.; also in Paidia bay, which is more sheltered, in 12 fathoms, mud, and good holding ground, though a small vessel

Chart, 1,086.
Var. 5° W.

might go farther in. Off some of the monasteries there is no anchorage, and to land goods or passengers, a vessel must lie-to. Many of these monasteries appear at a distance like little towns.

There is no anchorage around the base of Mount Athos, the water being too deep.

Plan on 1,647.

ERISSOS BAY.—On the north side of the Isthmus of Xerxes, and about 3 miles eastward of its narrowest part, a tongue of land projects 4 miles northward; its extremity is known as Cape Plati, and close to it are two large rocks or islets. On the west side of this tongue, and a little more than a mile south of the cape, is a nearly circular bay about 3 cables in diameter, with from 4 to 8 fathoms water, named Plati harbour; although the bottom, composed uniformly of mud and sand, is not good holding ground, the harbour is considered a safe port of refuge. Two sunken rocks lie off the south point of entrance.

Lat. 40° 31' N.
Long. 23° 56' E.

Cape Eleuthera, a steep rugged projection about 5½ miles N.W. by N. from Cape Plati, has a small islet called by the same name, and one or two rocks uncovered, close to it, and everywhere deep water.

Between the two capes, is the entrance to Erissos bay, which is 5 miles deep, and 10 miles in breadth north-west and south-east.

Ammos point, 1½ miles east-south-eastward of Erissos, is surrounded by rocks to the distance of about one cable; one-third of a mile westward, other rocks extend off about the same distance.

Erissos (ancient *Acanthus*), now a straggling village, is on the coast halfway between Mison and Ammos points. The ruins of a fortress which surmounts the village, are of mediæval construction, but its foundations are Hellenic, as also are many masses of masonry around.

Mison point, opposite the middle of the entrance to Erissos bay, bears S.W. ½ S. from the eastern extreme of Eleuthera islet.

Rock.—A rock with 2 feet water on it, lies with its outer end bearing N. by W. ¼ W., 1½ miles from Mison point, and 6 cables off-shore.

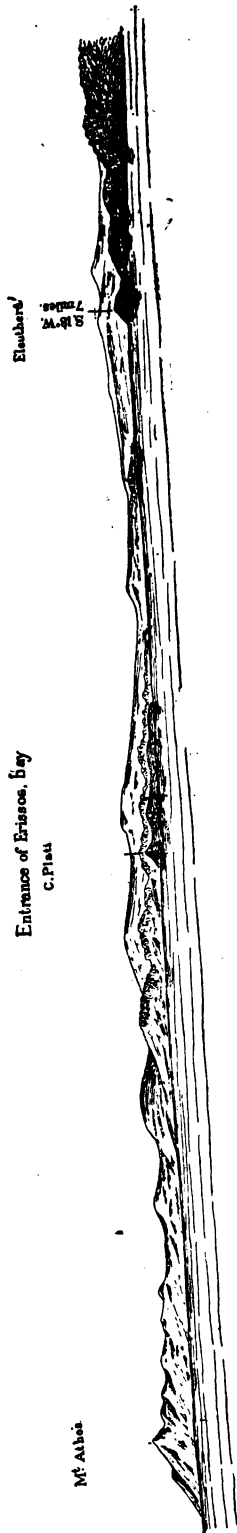
With this exception, there are no known off-lying dangers. The holding ground is said to be mud and sand.

Stratoni bay is the name given to the north-west corner of Erissos bay, where vessels have recently loaded manganese iron ore. The ore is mined at a place called Isboros, situated about 5 miles inland, where there is a telegraph station. The smelting is done at Stratoni, recognisable by its chimney, circular furnaces, and dwellings of the workmen. In 1905, 27,900 tons of manganese, and 12,900 tons of iron pyrites were exported.

Stratoni is 4 miles westward of Eleuthera island, and 4½ miles northward from Mison point. Vessels loading, head about E.N.E. with one anchor to the N.E., in 8 fathoms, and the other to S.E., in 13 fathoms over sand and weed, the vessel's stern being made fast by a strong hawser to a large iron buoy, painted red, and moored in 5 fathoms. Thus moored, the vessel lies parallel to the shore and 1½ cables from a short pier, from which the ore is carried to the ship by means of lighters, each carrying about 10 tons. These lighters are hove backwards and forwards by the ship's steam-winch, and by one on shore. The stevedore usually comes on board to berth the ship.

North-east gales throw in, at times, sufficient swell to prevent loading and compelling a ship to take shelter in Plati harbour, already described.

Water.—Fairly good well-water can be had by means of casks, and, by several days' notice, a few sheep may be procured.



Plan on 1,647
Var. 5° W.

Pratique is obtained at Daphni, already alluded to. The usual Custom-house and Consular business, is done at Saloniki, to which, the mining-engineer sends a messenger twice a week.

Chart, 1,086.

The **GULF of RUPHANI**, northward of Erisso bay, is 12 miles wide at the entrance between Cape Eleuthera, and Cape Deutheros on the north-east. From the line of these capes, the gulf recedes north-westward 14 miles to the sandy beach at its head, which is backed by high land.

Lat. 40° 36' N.
Long. 23° 47' E

Libiadha bay lies 7 miles north-westward of Cape Eleuthera. In front of the bay is the little islet of Kaphkana surrounded by shallow water, and rocks uncovered on its western side. Between the islet and the bay, there are 12 fathoms water, but rocks covered and uncovered extend off the north point of Libiadha bay, towards Kaphkana islet, leaving, however, a 9 fathoms channel between. Nearly midway between Cape Eleuthera and Kaphkana islet, and about one mile from the shore, is an isolated rock or islet, with only 5 fathoms south-eastward of it.

Stavros point, 4 miles north-westward of Kaphkana islet, is bordered by shoal water, and about 2 miles westward of the point, is the outlet of Bolbe lake, which is about 5 miles inland.

Plan on 1,679.

Struma river or Kara su.—A sandy shore, forming the head of the gulf, thence trends north-eastward to the entrance of the river Struma (ancient *Strymon*), and thence east-south-eastward $8\frac{1}{2}$ miles to Cape Deutheros, the north-east entrance point of the gulf, where the beach terminates. The elevated mountain Pilaf Tepe, 11 miles north-north-eastward of the cape, rises 6,143 feet high.

The ruins of Amphipolis, with the remains of an aqueduct and traces of the Acropolis, are still in existence on the left bank of the Struma.

Near the mouth of the river is a Custom-house, and a village called Chai Aghizi, is situated near the landing-place westward of the two lagoons.

There is anchorage off the river in 16 fathoms, mud, with a building at the entrance bearing about N. by E. The sea is, at times, much discoloured by the mud from the river. A surface current at the anchorage, has been observed to run at the rate of $2\frac{1}{2}$ miles an hour. Sailing-vessels call here occasionally.

Water may be obtained at a short distance up the river.

L. t. 40° 42' N.
Long. 24° 3' E.

Cape Deutheros.—Shoal water extends nearly half a mile off Cape Deutheros, which must be given a wide berth in rounding.

DEUTHERO COVE (LEFTERE).—Cape Brasides, 15 miles east-north-eastward of Cape Deutheros, is the termination of a tongue of land projecting eastward, and has a general depth of 7 fathoms close-to, but a ledge with 5 fathoms water on it extends outside this depth, 2 cables from the cape, in an E.N.E. direction. On the hill, nearly two-thirds of a mile within the cape, is a tower. The entrance to Deuthero cove, or Leftere, as it is called by both the Greek and Turkish inhabitants of the place, is three-quarters of a mile wide between the north extreme of Cape Brasides and the bluff point on the north. The cove within is nearly oval, $1\frac{1}{2}$ miles north and south, and nearly one mile east and west, with from 12 to 5 fathoms water, affording a snug anchorage and plenty of room for several ships.

The land at the head of the cove is cultivated, and just within the shore on the south-west, is a farm. The village of Deuthropolis, pro-

bably the ancient *Æsyme*, is about one mile inland from the southern part of the cove. Plan on 1,679.
Var. 4° 50' W.

Kisilad islet.—At $1\frac{1}{2}$ miles northward of the cove, and separated from the bluff point by a distance of two-thirds of a mile, is the islet of Kisilad; there are 19 fathoms water between the islet and point, but the shore of the bay north-west of the islet, is scattered with rocks. Chart, 1,086.

KAVALA BAY.—This bay is 7 miles north-eastward of Deuthero cove, and the lighthouse bears N.W. $\frac{1}{2}$ W., $13\frac{1}{2}$ miles from Cape Ommanney, the north point of Thaso island. It is about one mile wide between the points of entrance, and half a mile deep, with from 12 to 6 fathoms water, sandy bottom. Plan on 2,836b.

The head of the bay is formed by two yellow sandy beaches, separated by a rocky point on which is situated a large yellow house, conspicuous from a long distance. In the eastern bight, there is a conspicuous house standing close to the eastern extreme of the eastern yellow beach, and a few private residences, while in the western bight, the houses are fairly numerous and all of about the same size; the land is slightly cultivated.

The soundings are regular, and gradually decrease from a depth of 13 fathoms in the entrance, to the shore, the bottom being of fine sand except near the projecting points, where it is rock.

Kavala town (ancient *Neapolis*), occupies a rocky promontory, the houses rising one above the other to the summit, on which is an ancient fortress; the whole is encircled by old walls still in fair preservation. The promontory is connected to the mainland by an isthmus, over which, a fine Roman aqueduct conveys water from the hills to the inhabitants, but the supply is insufficient for their needs. The name of Philippi survives in that of Felibejik, a ruined Turkish hamlet, situated on the border of a marsh south-east of the site of Philippi. The principal remains of Philippi are situated three-quarters of a mile westward of Bereketli, a village 7 miles north-eastward of Kavala. Lat. 40° 55' N.
Long. 24° 25' E.

Kavala, with a population in 1902 of about 25,000 Turks and Greeks, is a thriving town; it is the residence of a British Vice-Consul. There is a short mole and landing place; the sanitary condition is said to be bad.

Communication.—By the Austrian Lloyd's steamship company, communication is maintained fortnightly with Trieste, Saloniki, Constantinople, and the principal ports in the *Ægean* sea. The Russian Company's steamers call here fortnightly both ways on their passage between Odessa and Saloniki. One Greek, and two Turkish lines of steamers also call weekly. Kavala is also a telegraph station.

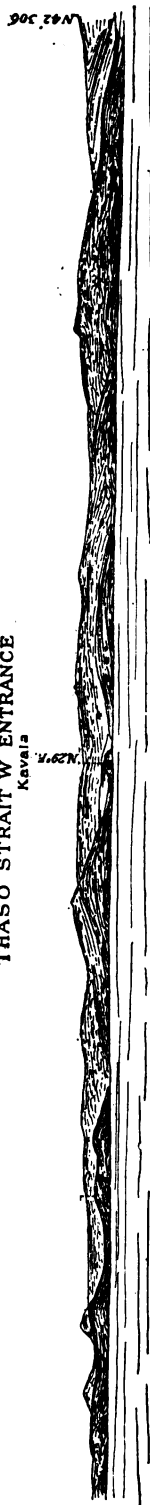
Trade.—The principal article of export is tobacco; the chief articles of import being flour, maize, sugar, iron goods, cotton goods, sacking and cotton yarns. The tobacco is grown in the neighbourhood in large quantities, and of a good quality. In 1906, the exports were valued at 1,120,000*l.*; and the imports at 366,334*l.*

Shipping.—In 1906, 278 steam vessels of 256,579 tons, and 1,740 sailing vessels of 17,488 tons, entered the port; of these none were British

LIGHT.—A *fixed white* light is exhibited at an elevation of 148 feet above the sea, from a white wooden framework on the walls of a castle on the east entrance point of the bay, and should be visible in clear weather, from a distance of 10 miles.

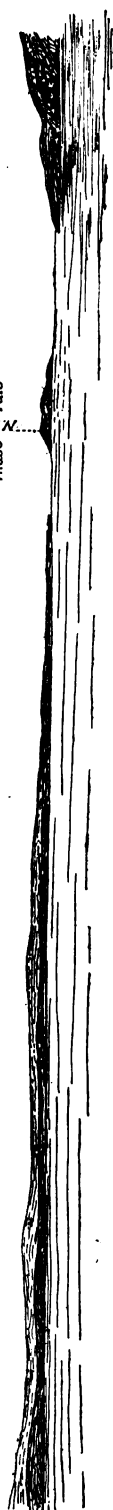
The best anchorage for a ship of heavy draught is in 11 fathoms over black mud, with the house on the rocky point between the beaches, bearing N.N.W. $\frac{3}{4}$ W., and the lighthouse bearing East.

THASO STRAIT W ENTRANCE



174

Thaso Pulo
N. 79° E.



Thaso

C Kephalo

S. 49° E.
12 Miles
Panagia I.



Chap. V.] KAVALA BAY.—THASO.—PANAGIA ROAD.

Small coasting vessels anchor in a bight under the walls of the town on the eastern side of the bay. Strong southerly winds bring in a heavy sea, and render the anchorage unsafe in summer until these winds subside. Plan on 2,886.
Var. 4° 40' W.

A rock above water, lies S.S.W. distant $1\frac{1}{2}$ cables from the western point of entrance; another rock lies three-quarters of a cable south-westward of the lighthouse.

Coast.—From Kavala bay, a low sandy shore trends eastward about $5\frac{1}{2}$ miles, and then south-south-east for 7 miles to Koan point (page 176), the north point of the west entrance to Thaso strait. At the back of this latter part of the coast, the land is low and swampy with several lagoons, and during winter, is frequently overflowed, so that communication between Kavala and Kalamuti is impeded. From Cape Brasides, the coast is backed by a chain of mountains which run in a north-easterly direction to Mount Zanthé, 16 miles from the sea, and 3,815 feet high. Chart, 1,086.

THASO is the most northern of the Ægean islands, and is somewhat circular in form, being 14 miles north and south, and 12 miles east and west; it is mountainous, more particularly on the eastern side, where Mount Ipsario, the highest peak, is 3,428 feet above the sea. The island appears to be a mass of marble covered with trees, chiefly fir, and some small oaks, but none of any size. The produce consists mainly of maize or Indian corn, tobacco, and vegetables; sheep are small, but cattle large. In ancient times, extensive gold mines are said to have been worked; and in the present day large quantities of calamine zinc ore are exported, 20,000 tons having been exported in 1906. Tin, iron, and copper are also reported to exist in the island. The population amounts to about 12,000 nearly all Greeks, dispersed in some ten villages.

Telegraph.—A cable connects Thaso with the mainland at Koan point, and thence by land line with Kavala.

THASO STRAIT is formed between Thaso island, and the low shore of the plain of the Nestus on the north, and in the narrowest part between Cape Ommanney and Koan point, is $3\frac{1}{2}$ miles wide. Nearly in the middle of the strait is Thaso Pulo, an islet nearly one mile in length north-west and south-east, 355 feet high, and steep to all round. There are no isolated off-lying dangers in the strait, the general depths being from 14 to 17 fathoms, sand or mud. Plan on 1,679.

Current.—A current generally sets westward through Thaso strait; and also southward of Thaso island; during southerly winds, the stream from the Dardanelles being diverted from its usual course and striking the Peninsula of Akte, is forced to the north-east and eastward along the coast of Rumelia, when the current in the strait has been found setting eastward at the rate of half a knot to $1\frac{1}{2}$ knots an hour. (See page 176.)

PANAGIA ROAD, on the north side of Thaso island, affords good anchorage in 9 or 10 fathoms, with Escombe point, the south-east extreme of Thaso Pulo bearing N.N.E., and Wellings point, the eastern point of the roadstead, E.S.E. A swell from the eastward often sets in, proportionally to the force of the wind. Plan, 1,684

There is a small artificial harbour near Wellings point with a depth of 2 feet. There is also a pier at the town, and another further west.

Wellings point has shoal water extending half a cable from it, and a bank, known as Bullmore patch, lies with its shallowest depth of 7 fathoms, N.N.E. $\frac{1}{2}$ E. distant 4 cables from the same point.

Plan, 1,684.
Lat. 40° 48' N.
Long. 24° 40' E.
Var. 4° 40' W.

Cape Ommanney bears W. by N. $\frac{3}{4}$ N.; and is distant 3 miles from Wellings point. The cape itself is fairly steep-to, but from the shore 4 cables south-west of it, a bank extends off the same distance, with depths under 5 fathoms. Not more than 9 fathoms will be found nearly half a mile north of Cape Ommanney. Between the latter and Wellings point the shore is fringed by shoal water extending off, $1\frac{1}{2}$ cables. The town of Pyrgos situated nearly half a mile south-west of Wellings point, is poor, but the houses are neatly painted. Between them there is a small artificial harbour suitable for vessels of light draught. The temperature at this anchorage in July has been noted to be nearly 10° higher than at Bashika, probably due to the radiation from the marble, and the nights are intensely hot.

Water may be obtained from a stream westward of an old tower either by landing casks and rafting them off, or with a long hose and engine.

Current in the road.—The navigating officer of H.M.S. *Edinburgh* remarks: "While the fleet lay in the road in September 1893, the current in the outer part was running to eastward, while at the same time the ships anchored near Thaso island had a current to the westward." (See page 175.)

Lat. 40° 37' N.
Long. 24° 35' E.

Kastro.—On the south-west coast of Thaso island, $2\frac{3}{4}$ miles eastward of Cape Kephalo, is the village of Kastro, known locally as Hamidieh; half a mile off it, there is good anchorage in $8\frac{1}{2}$ fathoms. There is a small pier and railway for the shipment of zinc from the mines. There is a similar pier and railway near Cavamith.

Plan on 1,679.

KALAMUTI HARBOUR.—**Koan point** (page 175), the north point of the west entrance to Thaso strait, is very low, projects to the south-west, and is surrounded by shallow water to a distance of from one to 2 cables; the point, however, may be passed at a distance of a quarter of a mile. The low shore eastward of the point, forms a bay upwards of a mile deep, and at the extreme eastern end of the bay, $3\frac{1}{2}$ miles from Koan point, protected from the south by Kalamuti point, is the little harbour of Kalamuti, called Keremidli by the Turks.

The harbour affords shelter for four ships of heavy draught in 7 to 8 fathoms of water, and inshore berths for two smaller vessels in about 6 fathoms, from all winds except those between S.S.W. and West which, however, are not of frequent occurrence. The anchorage, almost the only safe one for large vessels between Saloniki and the Dardanelles, is preferable to that of Panagia road, excepting in southerly winds, as at the latter place the varying current with even a moderate breeze causes a considerable sea. There is a short pier at Kalamuti, and the village is composed of about a dozen houses.

Shallow banks.—There are two bathing-houses on the south shore of the harbour. A depth of 5 fathoms will be found a quarter of a cable off the western one, and the same depth two-thirds of a cable from the inner bathing-house. Two hundred yards southward of the western bathing-house are two round clumps of trees close together. From the north-eastern sandy shore of the harbour, a shallow bank makes off $1\frac{1}{4}$ cables, where the depth is only 2 fathoms.

Supplies.—The plain is well wooded for about 6 or 7 miles inland, or to the foot of the hills, and abounds with game, consisting of wild

boar, pheasants, partridges, and hares. Provisions are cheap and abundant, and fish also plentiful.

Chart 1,086.
Var. 4° 40' W.

Cape Kara Su.—At about 5 miles eastward of Kalamuti point is Cape Kara Su, at the western outlet of the Kara Su (ancient *Nestus*) river. From the cape, the low shore trends north-east, and east, 9 miles to Cape Balustra (*see* page 128). The shore for the first 5 miles from Cape Kara Su, is broken through occasionally by the changing outlets of the river, into which there is scarcely a passage for a boat.

Lat. 40° 51' N.
Long. 24° 48' E

[For description of the coast eastward of this locality, *see* page 129 *et ante*.]

Chart, No. 2,836b.

CHAPTER VI.

THE GULFS OF SMYRNA AND SKALA NUOVA, WITH THE
ISLANDS OF PSARA, KHIOS, SAMOS, AND NIKARIA.

For description of the Kaloyeri rocks, lying on the same parallel and nearly equidistant between Cape Doro of Eubœa and the south end of Khios, *see* page 78.

Plan on 1,891.
Lat. 38° 32' N.
Long. 25° 35' E.
Var. 4° 20' W.

PSARA ISLAND, 27 miles north-eastward of the Kaloyeri rocks, is $4\frac{1}{2}$ miles in length north and south, and nearly 4 miles in breadth at its northern end, which is the widest part. It is lofty, and Mount Elias, the greatest elevation rising at the northern end, can be seen at a great distance. Situated on the inner part of Paleo Kastro, the south-western point of the island, is Psara, an indifferent town, partly in ruins, and at its southern extreme is a peaked rocky elevation on which stands the fort or castle.* The population of the island is about 3,500, all Greeks.

Port of Psara.—Under the east side of the town there is a small mole, with 2 to $2\frac{1}{2}$ fathoms within, over muddy bottom, which affords shelter to a few small trading vessels.

Anchorage.—The anchorage in Choralolimani bay, though exposed to the south, is considered secure during the summer months, as the holding ground is good, and it is an excellent place of shelter during strong winds from the northward. A fair berth is in 12 fathoms, with the two southern points of the island (eastward of the bay) in line, bearing E. $\frac{3}{4}$ S. Farther out, the bottom is rocky and uneven.

Vessels sometimes lie in a cove and secure to the shore, inside a small rocky islet at the northern end of the bay on the western side of Psara island.

There is also occasional anchorage southward of Anti Psara, off which end of it, is another small rocky islet, but between the two there is no passage.

Paleo Kastro point, on which the fort stands, is also surrounded by rocks, and should be given a berth of at least $1\frac{1}{2}$ cables; on the eastern side of the point, is a shoal with 3 feet water on it.

Kokino pulo, the south-eastern point of Psara island, is also bordered with shallow water, to a distance of a quarter of a mile.

Chart, No. 2,836b.

* During the Greek war of independence, the inhabitants of this little island, numbering about 6,000 when the war began, but which was more than doubled by Christian refugees from Asia Minor, Macedonia, and Thessaly, acquired an imperishable renown from the damage they inflicted on the Turks. The Sultan, however, determined to crush them, and at daybreak on the 3rd July, 1824, about 200 vessels with 14,000 troops attacked the town, and landed in a small cove on the north side of the island. The Psarians, after a gallant resistance, set fire to the powder magazine, and defenders and conquerors alike perished in the explosion. The subsequent carnage was awful: although about 2,000 persons escaped from the island, 3,000 were missing, and the loss of the Turks was 4,000, —*See* Murray's Hand-book for Greece.

SHOALS.—**Anti Psara** lies $1\frac{1}{4}$ miles westward of the southern part of Psara island, and in passing between them, a vessel should keep close to the former to avoid the following shoals :—

Plan on 1,891.
Var. $4^{\circ} 40'$ W.

Rock west of Psara town.—Between Windmill hill and the town of Psara, at a quarter of a mile from the coast, is a rocky shoal with 3 feet water on it, and 12 fathoms between it and the shore ; this danger is in the way of vessels working to windward.

Kuchopata shoal, with $4\frac{1}{2}$ fathoms on it, lies midway between Psara and Anti Psara, bearing E. by N. $\frac{1}{2}$ N., distant 8 cables from Xerathia tu Cava, the north-east extreme of Anti Psara. The latter has shoal water extending from it in the same direction one cable.

Rock.—A 2-fathoms patch lies S. by E., distant one mile from Turusi Pulo, the north-west extremity of Psara island. Between this rock and the reefs from the Psara shore, the distance is a quarter of a mile, and depth 42 fathoms.

Mustapha, with less than 6 feet water on it, is the name given to the outer of a group of rocks below and above water extending 3 cables north-westward from Turusi Pulo.

A rock, having only 6 feet water on it, lies half a mile W. by N. from Markaki, the central point on the north coast of Psara island ; from the rock, this point and that of Tritispela, the north-east extreme of the island, are nearly in line. To avoid this danger, keep the latter point well open of the former, until the little rocky islet of Agios Georgios bears southward of S.W. by W.

Lat. $38^{\circ} 36'$ N.
Long. $25^{\circ} 35'$ E

Another rock, with less than 6 feet water over it, lies 2 cables off the eastern point of Xera Chukanarlu bay, bearing S.W. by W. $\frac{1}{2}$ W., distant three-quarters of a mile from Markaki point.

Current.—On the western side of Psara, the current generally sets to the northward.

Caution.—As the current sets strongly on to the northern side of Psara island, it is advisable, especially in a sailing-vessel with light winds, to give this side of the island a fair berth.

KHIOS (SCIO) ISLAND.—This important island is 27 miles in length, north and south, and varies in breadth from 7 miles in the centre, to $15\frac{1}{2}$ miles at the northern, and 12 miles at the southern end. The population in 1898 amounted to 68,515, of which number 66,515 were Christians of the Greek church, 285 Roman Catholics, and 1,715 Mohammedans ; the population in 1898 was estimated to be about the same. It is rocky and mountainous throughout nearly its whole extent ; Mount Elias (ancient *Pelinaeus*) its greatest elevation, at the northern end, being 4,157 feet high. Southward, the mountains gradually decrease in height, and terminate at the southern extreme in Cape Mastiko, a bold prominent headland, about three-quarters of a mile northward of which, a hill over the eastern coast is 960 feet high. The hills are for the most part composed of a red-coloured marble streaked with white, and round the city are quarries of reddish freestone.

Chart, 1,645.
Var. $4^{\circ} 10'$ W.

Cape St. Nikolo the north-western point of the island is 10 miles to the eastward of Psara island, the channel between being deep and clear of danger.

Productions.—Khios island is celebrated for its beauty and fertility, and the climate is healthy and most delightful. It produces

Chart, 1,645.
Var. 4° 10' W.

olive oil, figs of a large size, grapes, oranges, citrons, lemons, almonds, and other fruits, which are exported both dried and fresh. Wine is made in large quantities and held in some repute, and khaki (a spirituous liquor distilled from raisins) is the best in the Archipelago. Much silk is also produced and manufactured into stockings, gloves, gowns, &c. The gum-mastic, one of its chief sources of wealth, is the product of a species of lentisk (*Pistacia lentiscus*); the other productions are sweetmeats, candied citrons, preserved cherries, syrup of cherries, conserve of roses, rose and orange flower water, &c.

Khios island possesses a great number of fine springs, and water is found everywhere by digging. The chief town or city is Scio, on the eastern side of the island.* (For Khios strait, see page 184.)

Trade.—In 1906 the exports consisting principally of leather, mastic, oranges, lemons, and almonds, were valued at 428,060*l.*; and the imports, principally manufactured goods and hides, at 270,000*l.*

In the same year 1,278 steam vessels, of 724,932 tons, and 2,903 sailing vessels of 40,395 tons, entered Port Scio; of these 4 steam vessels of 1,256 tons and 5 sailing vessels of 203 tons were British.

Lat. 38° 9' N.
Long. 26° 1' E.

Cape Mastiko, the southern extreme of Khios, is a bold abrupt headland, and at about 1½ miles south of it is the high conical islet of Venetiko, with from 25 to 50 fathoms water all round, and no danger between it and the cape; both show well at night.

The current off Cape Mastiko is strong and uncertain, and it generally sets to the northward along the western coast of the island.

Coast.—From Cape Mastiko the coast extends 9½ miles to the north-westward to Cape Amista being bold and broken with several small bays, but no anchorage and no off-lying dangers. From Cape Amista it trends to the north-eastward.

Rocks.—Brown rock, dry, and connected with the shore, from which it is distant about 3½ cables, is 1½ miles to the northward of Cape Amista; and Black rock, also dry, and three-quarters of a mile farther on, is 4 cables from the shore, with deep water between.

Ports Mesta and Aluntha.—Between Cape Amista and Cape St. Nikolo, about 18 miles to the northward, the coast forms a deep bight without anchorage excepting at Volisso (*see below*). Port Mesta is on the southern shore of the bight; both ports are fit only as places of refuge for small vessels, and are destitute of fresh water. Aluntha is a small islet about midway along the shore of the bight, at the head of which are some salt springs.

Aspro isles, on the south-eastern corner of the bight, affords shelter to vessels of about 20 tons. Their vicinity abounds with fish.

Volisso road, in the northern portion of the bight, affords the only anchorage for any but very small vessels; vessels may anchor here during northerly winds when unable to get through the channel between Psara and Khios.

Chart, No. 2,836*b*.

* On Sunday the 3rd April, 1881, Scio was visited by a terrible earthquake, which nearly destroyed the whole town and 45 villages; its effects were felt at Chesme, and Smyrna, and also at Karystos in Eubœa, Tinos, Syra, &c. About 4,000 persons were killed, and a large number wounded. The greater portion of the inhabitants were left utterly destitute, and the misery was intense. Many of the wounded were sent to Smyrna. Provision had to be made for housing over 40,000 people, most of whom lost not only their houses, furniture, clothing and money, but also many of their cattle.

Anchorage.—The old castle of Kastro on the hill, bearing about N. by E., and the left extreme of Khios island, N.W. $\frac{3}{4}$ W., will be a fair berth. A small islet lies in-shore, united to the main by a reef, over which there is no passage. Chart, 1,645.
Var. $4^{\circ} 10'$ W.

The promontories on the western side of Khios island, bear a close resemblance to each other, and this side of the island is comparatively uninhabited, all the principal villages being on the eastern side. Volisso and Mesta are the chief places.

Cape St. Nikolo, the north-western point of Khios, will be recognised by the round tower on its summit; it is bordered by shoal water, which extends along the coast northward and southward about two-thirds of a mile off. Lat. $38^{\circ} 33'$ N.
Long. $25^{\circ} 51'$ E.

Squalls.—In south-easterly gales, the squalls off the Amanei mountains, over the north-western part of Khios, are severe, and sailing-vessels bound through the Psara channel, should keep at a distance from the land.

Current.—The current along the western side of Khios generally sets to the northward.

Cape Anapomera, 9 miles eastward of Cape St. Nikolo, is the termination of Mount Elias, the greatest elevation of Khios, which at $2\frac{3}{4}$ miles southward of the cape, rises 4,157 feet above the sea; its rugged precipitous sides, and bluff cone-shaped rocky summit, render it conspicuous and most useful in fixing a vessel's position at a distance.

With the exception of Ghertis, a large rock above water, a mile eastward of Cape Anapomera (the northern extreme of Khios), and a third of a mile from the coast, there are no off-lying dangers along the northern coast of Khios at a prudent distance, nor is there anything to induce a vessel to be in close proximity to the land.

Port Marmaro runs in about a mile and has depths of from 14 to 3 fathoms, mud bottom. Commander Wharton, of H.M.S. *Fawn*, in December 1879, writes:—"Port Marmaro, though apparently an admirable harbour in southerly winds, has bad holding ground. The *Fawn* anchored in 7 fathoms water, near the head of the port, and with a long scope of cable dragged twice with a clear anchor, and even moved after a second anchor had been let go. There is a great deal of weed at the bottom. The wind was from South, force 8 in squalls which came down the valleys with great suddenness. No directions are necessary for entering this port, but as a shelter it is well to avoid it altogether." Plan on 1,635.
Lat. $38^{\circ} 33'$ N.
Long. $26^{\circ} 7'$ E.

Port Parapanta.—At about 6 miles south-eastward of Cape Anapomera and immediately eastward of Port Marmaro islet, is an inlet open to the northward, with depths of 14 and 10 fathoms, mud bottom, called Port Parapanta. Off the point which separates the two ports, is Margariti islet, under the south-western side of which, there is anchorage for a small vessel.

Coast.—From Cape Pampakas, the eastern entrance point of Port Parapanta, the coast trends to the south-eastward for 2 miles to Cape Vrulidia, a prominent headland. At three-quarters of a mile from the cape and 4 cables from the shore is Glastri, a large rock above water with a rocky shoal on its western side; rocks also project from the coast between. There are 35 and 38 fathoms water, close to Glastri rock.

Strovilo islet, close off Cape Vrulidia, has a passage inside it for boats. Strovilo islet is conspicuous and of a conical form with a few rocks at its base, but the water is deep near it.

Plan on 1,635.
Var. 4° 10' W.

From Strovilo islet, a bold cliffy coast trends to the southward for one mile to Cape Kaminaki, which, as well as the coast to the southward, is bordered by rocks. Thence the coast trends to the southward for another $2\frac{3}{4}$ miles to Port Kolokithia, being broken and steep-to.

Lat. 38° 29' N.
Long. 26° 9' E.

PORT KOLOKITHIA extends westward about three-quarters of a mile, and is more than half a mile wide, with from 30 to 10 fathoms water, but in the middle of the entrance there is a patch with 6 fathoms water. The port is separated from the inlets to the southward by Cape Sidero, on the northern side of which a shoal extends more than a cable northward. The usual anchorage is in the south-western corner, off the valley in which are some houses, in from 20 to 10 fathoms water, mud bottom. A small stream runs into the sea during winter.

In the north-western corner of the port is a small green islet, with a passage inside it for boats, and having a cove on each side; the western cove is shoal and muddy, and a good place to beach a vessel in case of necessity; the eastern cove is nearly 2 cables wide, from 15 to 6 fathoms deep, and a small vessel may anchor here and make fast to the shore.

From the cove to the northern point of entrance to the port, the shore trends eastward, and with the exception of a small rock above water about 2 cables from the cove, and steep-to, the coast is clear and bold.

Water may be obtained from a spring.

St. Stephano islet, about 2 cables in length, low, and rocky, is half a mile south-eastward of Cape Sidero, and fronts two inlets extending to the south-west and south, fit for small vessels; at the head of the inlets are salt springs.

Chart, 1,645.

East coast of Khios.—The shore for about 6 miles southward of St. Stephano islet forms one or two little points, and after the first 2 miles is bordered by a narrow bank, but beyond the distance of about one-third of a mile the water is deep; in the northern portion are one or two coves, and the shore is steep-to.

Plan on 1,645.
Lat. 38° 23' N.
Long. 26° 9' E.

PORT SCIO or KASTRO, 6 miles southward of St. Stephano islet, is nearly rectangular in shape, the basin being walled round by quays and protected from the sea by two moles. The length of the harbour is about 750 yards and breadth 360 yards. The central portion is dredged to a depth of 30 feet, and the rest to 13 feet, excepting that alongside the south quays and north mole, there is only a depth of 6 feet. The north mole extends S.E. by S. 270 yards to the ruined fort, and then S.E. by E. 160 yards. The south mole runs N. by W. $\frac{1}{4}$ W. straight, 355 yards; the width of the entrance is 115 yards.

On the north mole, and near the ruined fort, are situated the Health office, and Harbour-master's office.

On the northern side of the port, is the citadel, surrounded by Scio, the town and capital of the island, which, with the suburbs, extend between 3 and 4 miles along the coast, and being interspersed with trees and gardens has a pretty appearance from the sea.

LIGHTS.—**North Mole.**—On the south angle of the ruined fort on the north mole, at an elevation of 82 feet above the sea, are two *red fixed* lights, placed vertically, visible 6 miles in clear weather; and from a pole on the extreme end of the mole, are exhibited two *green fixed* lights, placed vertically, the upper one being elevated 32 feet above the sea.

A *fixed green* light on a mast, and elevated 32 feet above the sea, marks the end of the south mole. This is, however, very difficult to recognise, being in line with the lights of the town. Plan on 1,645.
Var. 4° 10' W.

Directions.—The coast bank is very steep, deepening in places from 9 to 14 fathoms, then 18, and the next cast no sounding with hand-lead. The best way to choose a berth under sail is to close with the shore and approach the anchorage before the wind, avoiding any spits of white water that may be seen and round out into the necessary depth.

Anchorage.—The anchorage off the town of Scio, commences at about half a mile southward of the entrance to the port, and continues as far as 2 miles northward of it. A large ship should be in from 12 to 18 fathoms water; a good berth is in 12 fathoms, muddy bottom, at about three-quarters of a mile north-eastward of the citadel. A berth will also be found abreast of the northern range of windmills, which stand on a kind of beach, and are the third range of mills from the port. A vessel may anchor nearer the port, but the holding ground is not so good, the bottom being soft mud, and in getting under weigh in a sailing-vessel, the anchor comes away before the cable is up and down.

Being near the port is more convenient for boats, which is a consideration in the autumn months, when the north-easterly winds blow with great violence, causing at times a considerable swell, and rendering it difficult for them to return to the shore.

Telegraph cables.—Five cables are landed at a cable house situated about a mile southward of the entrance to the port. One starts in a northerly direction for Tenedos island; two are laid to Chesme across the strait and the other two go to Syra. Vessels should avoid anchoring over them.

Coal.—No coal is kept in stock.

Water is supplied in open lighters, but is expensive.

Hospital.—This is a spacious, well-appointed institution, free to all, irrespective of creed and nationality.

Communication.—The Austrian Lloyd's steamers call fortnightly, Russian steamers weekly, Deutsche Levante monthly, and others frequently. There is telegraphic connection with the general system.

Consul.—A British Vice-Consul resides in the town of Scio.

Cape St. Helena, $2\frac{1}{2}$ miles to the southward of Port Scio, is a low rugged point, rising gradually to a round hill, upon which is an old tower, and it should be given a wide berth to avoid the elbow of the shoal southward of it, which is steep-to; the white sandy bottom, at times, is plainly visible when in its vicinity. The coast to the northward is bordered by a bank. Chart, 1,645.
Lat. $38^{\circ} 20'$ N.
Long. $26^{\circ} 11'$ E.

Katomeri point is a mile to the southward of Cape St. Helena. Between the point and Cape St. Helena, a mile north of it, the shore forms a small bay, with shallow water extending seaward nearly two-thirds of a mile.

Megalo and Kalamuti bays.—These two bays on the south-eastern side of Khios, separated from each other by the land terminating in the cliffs of Capes Gredia and Nenitā, are convenient stopping places for vessels bound through Khios strait during strong northerly winds.

Megalo bay is south-west of Katomeri point. In the northern part of the bay, there is also anchorage during northerly winds in 8 to 10 fathoms, sand and weed, with Paspargo lighthouse bearing about

Chart, 1,645.
Var. 4° W

E. $\frac{1}{2}$ S. Within the bay are the mastic plantations, from the cultivation of which a considerable revenue accrues. This shrub does not thrive in any other part of the island, and it has often been tried without success.

Cape Nenit  the south extreme of Megalo bay is formed by steep white cliffs with flat tops, and on its southern side is a ruined tower.

In Kalamuti, the southernmost bay, vessels may anchor in the northern part where convenient, in 16 to 14 fathoms, sand and weed.

Water may be obtained in Kalamuti bay.

Current.—The current round this end of Khios is strong and uncertain, but in Kalamuti bay it generally sets to the northward.

Paspargo and Panaghia islets.—These little islets lie near the middle of the southern entrance to Khios strait, and are rather more than half a mile apart, with from 8 to 13 fathoms water between them, excepting midway where there is a 4-fathoms rocky patch. The northern end of Paspargo is skirted by rocks, and rocks lie off each end of Panaghia. The passage between the former islet and Khios, as also that between Panaghia and Cape Bianco are clear of danger, except the narrow shore banks.

LIGHT.—On the summit of Paspargo islet is a white stone tower, from which is exhibited, at an elevation of 138 feet above the sea, a *white fixed* light, visible in clear weather from a distance of 12 miles.

KHIOS STRAIT, separating the island of Khios from the mainland, is narrowed at the southern entrance by the islets of Paspargo and Panaghia, but the passages between Paspargo and Khios, and between Panaghia and the mainland, are wide and clear.

Northward of these islets, the strait is wide, and also clear, if we except the Kumuthi shoals on the eastern side. North-eastward of these shoals, is the island of Goni, in front of the bay of Eritra on the south. In the northern part of the strait, the Spalmatori islands lie in an oblique direction across it, leaving deep and clear channels on either side of them; the channel between the south-eastern end of the islands and the mainland being upwards of 3 miles wide.

Khios strait affords several anchorages and stopping places, such as the bays immediately north and south of Cape Bianco; Kalamuti, Megalo, and Chesme bays, Port Kolokithia, and the anchorages in the Spalmatori islands. It is well lighted, and with the most ordinary attention its navigation is easy. As no ordinary vessel can work to windward during strong north or north-easterly winds with a lee current, it will be necessary under such circumstances to seek an anchorage until the wind moderates, when it will be succeeded by a strong southerly wind and northerly current.

Currents.—In the strait of Khios between Cape St. Helena and Cape Bianco, and in the channels on either side of the Spalmatori islands, with fresh north or north-easterly winds, no ordinary sailing-vessel can work to windward, but must anchor in one of the bays already mentioned until a change takes place; when, with a southerly wind, the current will run strong to the northward.

MAINLAND COAST.—**Cape Bianco** (ancient *Argennum* prom.), as its name implies, consists of white cliffs of moderate elevation, conspicuous from the south-westward, and in shape somewhat resembles the Bill of Portland, on the south coast of England. The south-western face of the cape is bordered at a short distance by shoal

Lat. 38° 17' N.
Long. 26° 14' E.

water, and its northern extremity is also bordered by a rocky shoal, which extends off nearly 2 cables. The distance, however, between the rocky shoal and Panaghia islet westward of it, is three-quarters of a mile. For coast to southward of Cape Bianco, *see* page 203. Between it and Kezil point nearly 3 miles north-eastward, the coast, which is white chalk cliff, bends southward and forms a bay. At about three-quarters of a mile eastward of the northern part of Cape Bianco, is a little islet surrounded by shoal water, lying within the 5-fathoms line of soundings, which passes round the southern side of the bay more than half a mile from the shore; within this distance, the water is shallow.

Chart, 1,645.
Var. 4° W.

Temporary anchorage.—During strong southerly winds, there is anchorage in this bay north-eastward of the northern part of Cape Bianco, in 10 to 12 fathoms over coarse sand, good holding ground, for any number of vessels, but they should be prepared to leave in the event of a change of wind to the opposite quarter.

CHESME BAY.—Kezil point, the south entrance point of Chesme bay, projects northward, is of a red colour and steep to on the western side, but shoal water extends a little northward, and along the shore eastward of the point at the distance of a cable.

Plan on 1,635.

LIGHT.—On the extremity of Kezil point, is erected a lighthouse from which, at an elevation of 65 feet above the sea, is exhibited a *fixed white* light, visible in clear weather from a distance of 10 miles. The light shows very faintly over the bay, when bearing westward of S. 60° W.

Kaloyeri reef lies in the approach to Chesme, and, within the depth of 5 fathoms, is $3\frac{3}{4}$ cables in length north-west and south-east, and from one to $1\frac{1}{2}$ cables in breadth. On it are several rocks awash, or with less than 6 feet water, and over other parts, 2 to 4 fathoms; close to its edge, there are from 8 to 13 fathoms. The outer part of the reef with depth of 5 fathoms, bears N.W. by W. $\frac{1}{2}$ W., distant one mile from Kezil point lighthouse.

Beacon.—Near the centre of the reef, is a conical beacon about 10 feet high, from which Kezil point lighthouse bears S.E. by E. $\frac{3}{4}$ E., distant $7\frac{3}{4}$ cables. From a similarity of colour the beacon is not easily discernible when seen against the land. (*See* view of the beacon on plan No. 1,635.)

Lat. 38° 20' N.
Long. 26° 17' E.

Cape Mastiko, the southern extreme of Khios, open southward of Cape Gredia, and also just open of the land of Cape Bianco, bearing S. 54° W., leads south-eastward of the reef; but there will be no doubt about clearing the reef, if Kezil point lighthouse is passed within the distance of a quarter of a mile.

At night, from the north-westward, keep Kezil point light bearing southward of S.E.

Kara dagh point is a broad headland on the south side of Chesme bay, dividing Aiasmata bay from Chesme harbour.

Anchorage.—There is anchorage at one-third of a mile eastward of Kezil point lighthouse, in about 10 fathoms, good holding ground. Nearer the town, the bad holding ground as shown on the chart northward of Kara dagh point, is about $1\frac{3}{4}$ cables in length, in an east and westerly direction, and three-quarters of a cable in breadth, with rocky bottom; trading steamers anchor farther northward, where the

Plan on 1,635.
Var. 4° W.

holding ground is good. Large ships may choose a berth where convenient, north-eastward of the lighthouse, in 15 or 16 fathoms, mud.

Telegraph cables.—Two telegraph cables are landed on the south-east side of Aiasmata bay.

Chesme town (ancient *Kyssus*), on the eastern side and near the head of the bay, is pleasantly situated partly on the face of a slope, crowned by the ruins of an old castle. It contains several mosques, a Greek church, public baths, Custom-house, and numerous coffee-houses.

Trade.—A great quantity of raisins are exported, and nearly all the fruit sold in the British islands as Smyrna raisins, are grown in this neighbourhood.

Population.—The population is about 7,500.

Consul.—A British Vice-Consul resides here.

Communication.—Chesme is connected with the general European telegraph system. Austrian Lloyd's steamers call fortnightly, connecting with Trieste, Peiræus, Smyrna, Constantinople, Constantza, &c.; and other steamers call frequently.

Chart, 1,645.
Lat. 38° 23' N.
Long. 26° 18' E.

KUMUTHI POINT.—From Chesme, the coast which is clear of danger, trends northward, gradually decreasing in height to Kumuthi point, a distance of 3 miles. Kumuthi point is low and surrounded with rocks; it forms with Paramesa point $1\frac{1}{2}$ miles eastward, the entrance of an inlet $1\frac{1}{2}$ miles deep, having from 18 to 5 fathoms water, mud bottom. There is a narrow passage northward of Kumuthi point into Eritra bay, which may be used by small vessels rounding the point carefully and feeling the way in by the lead.

KUMUTHI SHOALS are a cluster of rocky patches on a bank extending $1\frac{1}{2}$ miles northward of Kumuthi point, with deep water close to on their western and northern sides. Some of the rocks are nearly awash, others have less than 6 feet water on them, and in places, 2 and 3 fathoms, with deep water between. Near the western edge of the bank, and a little more than three-quarters of a mile N.N.W. $\frac{3}{4}$ W. from Kumuthi point, is Kumuthi islet, about 150 yards in extent, oval in form, and composed of red earth and loose stones.

Kumuthi shoals are the chief danger in the navigation of Khios strait; the bottom is so level and deep, and the bank so steep-to, that soundings will not indicate approach, and therefore when passing them, a vessel's position should be checked by bearings. The line joining the two lights of Paspargo islet and Pasha island passes one mile westward of these dangers; to ensure safety therefore when in their vicinity, Paspargo islet light should be kept bearing southward of S. 24° W., and Pasha island light eastward of N. 24° E.

In that case with Kezil point light bearing S. by E. a vessel will be to the north-westward of the shoals. The south extremes of Makro and Platia islets in line, bearing N. 86° E., lead northward of Kumuthi shoals.

ERITRA BAY.—This extensive bay is eastward of the peninsula of which Kumuthi and Paramesa points are the northern extremes. Its shore is irregular with several projections, bays, coves, islets, rocks, and shoals, and for the navigation of which, the chart must be the guide. The north-eastern part of the bay is covered by the promontory of Mavro Vuni (the summit of which is 1,044 feet high) projecting nearly 3 miles south-westward; the angle which it makes with the

coast on the south, is called Mavro Vuni bay. At the head of this bay there are anchoring depths, as well as in places along the coast south-eastward of it. Chart, 1,645.
Var. 4° W.

The town of Eritra (ancient *Erythræ*) is on the shore in the south-eastern part of the bay westward of a peninsula extending 3 miles north-westward and terminating at Keras point, but the town is of no commercial importance. The town is fronted by several islets and shoal patches.

Goni island is the largest of a group of islands in front of the bay of Eritra, between Kumuthi shoals on the south-west, and the promontory of Mavro Vuni on the east, having passages on either side of the group. The islands occupy a space of 4 miles east and west, and about half this distance north and south, and with Kumuthi shoals may be considered part of the eastern boundary of Khios strait. Lat. 33° 27' N.
Long. 26° 21' E

Makro islets, the two western of the above group, are close together, with from 9 to 28 fathoms between them and Kumuthi shoals. The passage between these islets and Goni island is deep, but narrowed by a large rock above water rather nearer Goni, and other rocks uncovered near the south-eastern end of Makro.

Meso and Platia, the two eastern islets of the group, are united by a reef; the passage between Meso and Goni is deep, and about one-third of a mile wide; a large rock above water, lies at the southern entrance. The passage between Platia and the promontory of Mavro Vuni, is clear and deep, and 6 cables wide.

Trago rocks above water and surrounded by others under water are three-quarters of a mile to the eastward of Mavro Vuni point, the southern extreme of the peninsula of the same name.

SPALMATORI ISLANDS.—These islands in the northern part of Khios strait, consist of two large islands and numerous islets, and together occupy a space of $6\frac{1}{4}$ miles in a north-west and south-east direction, with irregular coasts. Plan on 1 635.

Agnussi, the largest and westernmost of the group, is $4\frac{1}{2}$ miles in length, and its most elevated part towards the western end is 555 feet high. A hill with a beacon on it about a mile from the south-eastern end, is 478 feet high, and called Beacon peak.

Agnussi reef.—The north-western end of Agnussi is bold, but a reef which borders the western face of this end of the island, extends nearly 2 cables northward from the north-west extremity of Agnussi island. With this exception, and the reef bordering Cape Kaminaki, the passage between Spalmatori islands and Khios is nearly one mile wide, clear and deep, and is called Spalmatori channel.

Temporary anchorage.—There are anchoring depths eastward of Agnussi reef, over coarse sandy bottom, and in case of actual necessity a steam-vessel might drop an anchor here during southerly winds, but it would be necessary to leave directly any indication of a change took place. This is the only place to anchor on the northern side of these islands, the water elsewhere being too deep.

Kio islands, are two small flat islets close together, and surrounded by shoal rocky ground which extends off north and south, rather more than a cable. These islets lie $1\frac{1}{10}$ miles south-eastward of Cape Kaminaki of Khios, and 7 cables from the shore of Agnussi island.

Plan on 1,635.
Var. 4° W.

Rock awash.—At half a mile S.E. by E. from the Kio islets, and one-third of a mile from Agnussi, is a rock awash with shoal water around it. The water is deep near these islets and rock, and they should be given a fair berth.

Lat. 38° 31' N.
Long. 26° 14' E.

Mandraki islet is the outermost of three low islets situated on a bank extending from the south-western coast of Agnussi between two inlets, and separated from the shore and from each other by boat passages.

Shoal patch.—At about a quarter of a mile south-eastward of Mandraki islet, is a shoal patch with 4 fathoms water on it.

Rock.—At rather more than three-quarters of a mile eastward of Mandraki islet, is a clifty point, the southern termination of Beacon peak, off which, at 2 cables from the shore, is the outer edge of a rocky patch with less than 6 feet water on it, and 10 fathoms between it and the coast.

Between the clifty point and the south-eastern end of Agnussi, there are two small inlets with from 8 to 3 fathoms water.

Anchorage will be found in places along the south-western side of the Spalmatori group, the bottom sand and mud, or sand and weed, available during strong north-easterly winds.

Plan on 1,568.

Pasha island is nearly 2 miles in length, and its northern end is separated from Agnussi by a narrow passage, with 2 fathoms water, leading into Port Boghazi on the south. The little bays on the western side of Pasha island, with those on the eastern end of Agnussi and the islets fronting them, form the Ports of Pasha and Boghazi.

LIGHT.—Situated 280 yards from the eastern extreme of Pasha island, is a white stone tower, from which is exhibited, at an elevation 246 feet above the sea, a *white flashing* light, the flashes occurring *every minute*, and except when obscured by the land, visible in clear weather from a distance of 18 miles.

Port Boghazi is the western and narrower of the two ports, and the entrance is between the shoal bordering Gavathi islet, 150 feet high, and the reef extending southward from the islet of Arkondo on the north-west; the channel to the anchorage is nearly a mile in length, and carries from 20 to 10 fathoms water. The anchorage is northward of Pondiko island in from 10 to 12 fathoms, sand, with better shelter from southerly winds than Port Pasha affords.

Port Pasha is between the island of the same name and Vatou island on the east, and Gavathi and Pondiko islets on the west; this port is open to the southward, and the bottom is irregular and rocky. A narrow passage 4 fathoms deep, between Gavathi and Pondiko islets, leads from Port Pasha to Port Boghazi.

Lat. 38° 30' N.
Long. 26° 18' E.

Vatou island is surrounded by a reef, and separated from Pasha island on the north by a narrow 4-fathoms passage.

Shoal.—At the western end of Vatou, is a small islet, and 1½ cables north-westward of the islet, is a rocky shoal with 2 fathoms water on it.

Bank.—A bank with 4½ fathoms water on it lies S.E. by E. half a mile from Pasha island lighthouse, and E. by N. ¾ N., distant 4 cables from Cape Turko, the south-east extremity of Pasha island.

Caution.—The soundings in this locality not being in sufficient detail, caution must be used in approaching the shores. Plan on 1,568
Var. 4° W.

Egri-liman channel.—The passage between Pasha island and Utch islets southward of port Egri-liman, is $3\frac{1}{2}$ miles wide, clear and deep, and called Egri-liman channel. Chart, 1,645.

PORT EGRI-LIMAN.—The entrance to this port (ancient *Phœnicus*) is rather more than 4 miles N.E. by E. $\frac{1}{2}$ E from Pasha island lighthouse. The western side of the port consists of a narrow irregular clifty peninsula trending northward parallel to the coast for $1\frac{2}{10}$ miles. It is a narrow inlet open to the north, 2 cables wide at the entrance, which width gradually decreases to about one cable, 6 cables from the entrance, whence to its head, is a mud flat with from 3 to $1\frac{1}{2}$ feet water over it. The depth of the port varies from 12 fathoms near the entrance to 6 fathoms near the commencement of the mud flat just mentioned. Local vessels frequently seek shelter in this port. Plan on 1,635

Beacon.—A white beacon, on a hill 108 feet high, stands near the northern end of the peninsula; (*see* view of entrance to the port on plan No. 1,635).

A shoal with $2\frac{1}{2}$ fathoms water on it, lies $1\frac{1}{4}$ cables off the north extreme of the peninsula, bearing N.N.W. $\frac{1}{2}$ W. distant 2 cables from the beacon.

Utch islets.—Two-thirds of a mile southward of the extremity of the peninsula, are Utch islets, a cluster of three little islets and rocks, extending nearly 3 cables from a rocky point, and steep-to.

Rakos islets lie nearly 6 cables farther south, and about the same distance from the coast as Utch islets. There are 6 fathoms water, about 2 cables south-westward of Rakos islets.

Shoal patch.—One-third of a mile south-eastward of Rakos islets, off the western entrance point of a bay, is a shoal patch with 2 fathoms on it. Chart, 1,645.

The coast from Mavro Vuni point northward to Port Egri-liman, is high and bold.

Garen rocks.—At about $1\frac{3}{4}$ miles northward of the entrance to Port Egri-liman are Garen or Black rocks, above water, extending about a quarter of a mile from the south entrance point of a small indentation known as Garen cove. Two rocks, with less than 6 feet on them, also lie about 3 cables W. by S. and S.W. by W. respectively, from the southern extreme of this point. At half a mile northward of Garen rocks, is another sunken rock, a quarter of a mile from the shore. All these rocks are steep-to. Lat. 33° 34' N.
Long. 26° 22' E.

The peak of Mavro Vuni, open westward of Egri-liman peninsula S. 24° E., leans outside or westward of these dangers.

PENINSULA OF KARA BURNU.—**Kara burnu.**—From Garen rocks the coast trends northward 6 miles to Kara burnu (ancient *Melæna*), known by its steep dark cliffs. South-westward, is a large rock or islet close to the shore, and over the cape on a hill are three windmills.

Kumur Baba.—At 3 miles eastward of the cape, is Kumur Baba, the eastern termination of a steep cliff two-thirds of a mile in length, and the most northern part of the peninsula of Kara burnu.

Chart, 1,645.
Var. 4° W.

The peninsula of Kara burnu, between the shores of Eritra bay on the west and the Gulf of Gul-Baghche on the east, where it is nearly 3 miles across, extends northward nearly 16 miles, with an extreme breadth of about $9\frac{1}{2}$ miles, and the summit of Boz dagh, its greatest elevation, is 3,906 feet high. Its coast is high and bold, nearly everywhere clear of danger, with deep water at a short distance. In sailing-vessels, the shore of the peninsula should not be approached too near, as the wind may become light. (See view on chart No. 1,645.)

Peak of Mimas.—Between Kumur Baba and Kinlu point, 2 miles eastward, the coast forms a slight bay. Kinlu point is a bold dark bluff and steep-to. At $1\frac{1}{2}$ miles southward of the point, is the remarkable peak of Mimas, in the form of a sugar loaf, and 1,724 feet high; it rises from the northern part of the Boz dagh, the elevated chain of mountains which runs through the peninsula of Kara burnu from the south; it is an excellent mark, and visible from all directions seaward.

Plan on 1,645.

Coast.—The islet of Buyuk Sahib is 2 miles east-south-eastward of Kinlu point; the first part of the coast between, is clifty and steep-to, but Tuzla point about half-way is rocky, and shoal water extending on more than one cable borders the shore southward round port Sahib.

Lat. $38^{\circ} 40'$ N.
Long. $26^{\circ} 32'$ E.

The islet of Buyuk Sahib is half a mile in length north-east and south-west, 168 feet high, and bears a near resemblance to the Bill of Portland, the south-western end being a steep white cliff, declining with a gentle slope to the north-east, where it is also bold and steep-to. With the exception of the north-western part, the islet is bordered all round by a narrow shoal, and rocks extend off three-quarters of a cable from its south-west extremity.

Shoal.—North-westward of this end of the islet, is a rocky shoal $1\frac{1}{2}$ cables in length, north-east and south-west, with less than 6 feet water on its central part. The western end of the shoal is 2 cables from the islet, and in the narrow passage between there are from 6 to 10 fathoms water. This shoal is separated from the bank off the shore of the peninsula by a passage 2 cables broad.

At $3\frac{1}{4}$ cables southward of Buyuk Sahib, is Fanar burnu, a point projecting slightly to the north, and on a hill 299 feet high, a little within it, are three or four mills. Off the north-eastern face of the point, is another islet, Kuchuk Sahib, 3 cables in length and bordered by a narrow shoal, with a narrow channel $4\frac{1}{2}$ fathoms deep midway between it and the shore.

Port Sahib.—On the western side of Fanar burnu, is a bay which forms with Buyuk Sahib islet on the north, Port Sahib, with depths of 20 to 10 fathoms, mud bottom. The port is open to the north-east, fit only for small vessels, and not much frequented. It is subject to strong and sudden gusts of winds off the land. The south-easterly winds at times blow with much force out of the Gulf of Smyrna, when shelter may be found in this little port. At the head of the bay, is a little village, and a pier.

There is no danger in entering between Buyuk Sahib and Kuchuk Sahib. In the northern passage, keep about 2 cables from the shore and in not less than 6 fathoms water, until in the port.

Water and small supplies of provisions may be obtained.

Chart, 1,645.

GULF of SMYRNA.—Kinlu point of the peninsula of Kara burnu, and Cape Hydra (Aslam burnu), may be considered the western and eastern entrance points respectively of the Gulf of Smyrna. From a line between Kinlu point and Cape Hydra, which bear from each other E. by N. and W. by S., distant a little more than 13 miles, the Gulf of Smyrna trends in a south-south-east direction 22 miles, then

eastward about 12 miles to the anchorage off the town of Smyrna. Its breadth varies, but narrows as the inner part is approached, when the channel becomes irregular and contracted. The soundings which are from 43 to 45 fathoms in mid-channel at the entrance, gradually decrease towards the head, and temporary anchorage will be found in case of necessity all over the upper part of the gulf.

The shores of the gulf are opposite in character; the south-western is high and steep, being the base of high mountainous land, whilst a large portion of the north-eastern is a low broken shore with lagoons backed by a plain, but the channel is well lighted, and the navigation easy.

A description of the south-western side of the Gulf of Smyrna, including the gulf of Gul-baghche as far as Vourlah road, will now be given, following which, the eastern shore from Cape Hydra will be described.

Coast of Kara burnu peninsula.—The coast from Port Sahib trends in a general south-south-east direction nearly 13 miles to Cape Aspro; a sunken rock lies close to Dirsek point, and between Artez point and Cape Aspro the shore is bordered by shoal ground, which extends off the eastern side of the cape a distance of nearly 3 cables.

GULF OF GUL-BAGHCHE.—Cape Aspro is the north-west entrance point of the Gulf of Gul-baghche; from this cape, the gulf extends southwards $9\frac{1}{2}$ miles, decreasing from $3\frac{1}{2}$ miles in width at the entrance, to $1\frac{1}{2}$ miles at its head. In the middle at $1\frac{1}{2}$ miles from its head, is the islet of Hermo, 4 cables in extent, and connected to the eastern shore by a 2-fathoms flat, which borders the shore all round the upper part of the gulf from Kalabak, a point on the eastern shore one mile northward of the islet. Southward of the islet, and between the projecting parts of the flat, there are depths of 3 and 5 fathoms. The soundings, from 15 fathoms at the entrance of the gulf, decrease to 6 and 5 fathoms at half a mile from Hermo islet. The eastern shore of the gulf should be avoided, as it is bordered by shoal water, and about halfway between the end of the promontory (forming the south-eastern entrance point of the gulf) and the head of the gulf, is a detached shoal of 2 fathoms, half a mile from the shore. The shoal is also $1\frac{1}{2}$ miles northward of Kalabak point just alluded to.

Anchorage.—Vessels at times during northerly winds anchor under Cape Aspro, in from 10 to 15 fathoms water. In steering for this anchorage, the eastern point of the cape should be given a wide berth. Vessels in this vicinity should be prepared for the heavy squalls which occasionally descend from the high land.

CHUSTAN or LONG ISLAND.—This island, in the middle of the Gulf of Smyrna, is nearly $5\frac{1}{4}$ miles in length in a north and south direction, about $1\frac{3}{4}$ miles in extreme breadth, and its most elevated part, (upon which is a beacon) near the centre, is 627 feet high. Its coast is slightly irregular, and bordered by a narrow shoal, which at the south-western shoulder of the island, extends off $3\frac{1}{2}$ cables, with a small islet on it, and rocks awash near its extremity.

Chustan point, the northern point of the island, is a narrow tongue of moderate height, and steep-to; nearly one mile southward of it, close to the western shore, is a little islet with 4 fathoms water inside it.

At the south-western part of the island is a bay formerly known as English harbour, with depths of 17 to 8 fathoms, but in the eastern part are rocky patches with from 4 to 5 fathoms water on them; a tongue of shoal ground with $3\frac{1}{2}$ and 5 fathoms water over it, extends $3\frac{1}{2}$ cables southward from the south end of the island.

Plan on 1,521.
Var. 3° 50' W.

On the eastern side of the island, at about halfway between the north and south points, the coast forms a bay with from 16 to 5 fathoms water; Long point, the southern extreme of the bay, is a cliffy projection of a grayish colour, and over it, is a peaked hill of similar appearance.

Tribune rock.—At $5\frac{1}{4}$ cables N. $\frac{1}{4}$ W. from the outer part of Long point, and $6\frac{1}{2}$ cables from the shore to the west, is Tribune rock with 2 fathoms water on it, and 5 and 4 fathoms around. The northern point of Yilanejah island S. 19° E. well open eastward of Kilsali island, leads eastward of the rock, but a better mark is to keep nearly the whole of Yilanejah open. (*See view from Tribune rock, on plan No. 1,521.*)

Passage west of Chustan island.—Chustan island is separated from the coast of Kara burnu peninsula, by a passage $2\frac{1}{2}$ miles wide, having from 20 to 6 fathoms water; the central part is clear, but the coast on either side should not be approached too closely, especially the shoal points at the southern end of the passage.

Shoal.—The passage between Chustan island and the shore of the promontory southward of it, is $1\frac{4}{10}$ miles wide, but a shoal of hard sand and stones with $2\frac{1}{4}$ fathoms water on it and about 2 cables in extent, lies in the fairway, its northern end bearing N. $\frac{3}{4}$ W. distant $6\frac{1}{2}$ cables from the eastern point of the bay in the north end of the promontory just alluded to.

Clearing-marks.—When passing southward of the shoal, bring the north-eastern extreme of Penarli island in line with the north-eastern sides of Yasajah islets S. 50° E., which will lead southward of the shoal and also the 5-fathoms rocky patch 8 cables north-westward of it. The extremity of the little peninsula north-west of Vourlah road in line with the point north-north-westward of it, bearing S. 23° E., leads north-eastward of the shoal.

Lat. 38° 26' N.
Long. 26° 47' E.

Kilsali island is $1\frac{2}{10}$ miles in length, nearly three-quarters of a mile in average breadth, with a hill at its south end 370 feet high. Its western and south-eastern coasts are bordered by shoal water, and in places the depth of 5 fathoms is nearly $2\frac{1}{2}$ cables from the shore, which should be given a wide berth in a vessel of heavy draught. The passage between its north-western end and Chustan island is $6\frac{1}{2}$ cables wide, and in the fairway from 16 to 25 fathoms deep.

Plan, 1,617.

Marathussæ islands.—South-eastward of Kilsali is a cluster of islands and islets, the principal of which are named Yilani (flat, and very little above water), Yilanejah, Penarli, Akjadah, and Yasajah; these islands are each surrounded by shallow water, excepting the three first, but have deep, though in some cases, narrow passages midway between them. Between Yilani and Yilanejah the depth is 10 fathoms, and between the latter and Penarli 6 fathoms.

Caution.—As many of the soundings on plan No. 1,617 have been enlarged from a smaller scale, extra caution must be used in approaching the shores.

Yasajah island, 89 feet high, is the westernmost of the four largest of the cluster just mentioned; it is 4 cables in length north and south by $1\frac{3}{4}$ cables in greatest breadth, its southern point being sharp and narrow. Two small islets lie north-westward from its northern extremity, the outer one being a quarter of a mile distant, and the other about half that distance.

Rocks with less than 6 feet water on them, lie 2 cables westward from the north end of Yasajah.

West-south-westward 8 cables from the south point of Yasajah island, is the outer part of a little peninsula of the main shore. The island and peninsula are connected by a bank with depths under 10 fathoms, and on this bank, a patch with only 3 fathoms lies 2 cables from the south point of Yasajah island; a patch of 4 fathoms lies $3\frac{1}{2}$ cables from the peninsula.

Plan, 1,617.
Var. $3^{\circ} 50'$ W.

Clazomenæ islet, $6\frac{1}{2}$ cables in length, is situated with its outer end bearing S.E. distant 2 miles from the extreme of the little peninsula just alluded to, the coast between them forming two bays. Clazomenæ islet, together with Injerli, a small islet lying 2 cables northward of its outer extremity, shelter the south-eastern and larger bay from the eastward. Further protection is afforded by the remains of the ancient breakwater connecting Clazomenæ to the shore. A new breakwater connecting the islet with the shore has been constructed 8 yards to the eastward of, and parallel to the remains of the ancient breakwater; it has 3 arches under it, the southern one being navigable for small boats. On the island end is a guard house and telegraph station; the poles run along the breakwater. On the south end there is a small light-house about 20 feet high, from which an occasional *white fixed* light is exhibited. This islet contains the quarantine station.

Vourlah Skala is the name of the landing at the head of this bay for the town of Vourlah which, with a population of about 25,000, is situated $2\frac{1}{2}$ miles southward. The depths in this bay are irregular, varying from 10 to 3 fathoms. Two 3 fathoms patches are situated $2\frac{3}{4}$ and 4 cables respectively N.W. $\frac{1}{2}$ N. from the south extreme of Clazomenæ islet.

Lat. $38^{\circ} 22'$ N.
Long. $26^{\circ} 47'$ E

Communication.—A coast road, and daily steamer, connect Vourlah Skala with Smyrna, distant 18 miles; a good road also connects Vourlah with Chesme.

Consulate.—A British Vice-Consul resides here.

VOURLAH ROAD.—Bearing S. by E. $\frac{1}{2}$ E. and distant nearly one mile from the little peninsula already mentioned, is the point separating the two bays. The shore of the north-western bay recedes from this line 4 cables. The 3-fathoms line is very little inside the line joining the peninsula and point, and off the extremities themselves not more than that depth will be found at the distance of a cable.

The space between this shallow bay and the islands Yasajah and Penarli, is known as Vourlah road, with depths of from 15 to 4 fathoms over mud and weed.

Directions.—Vessels may enter Vourlah road by the passages between any of the larger Marathussæ islands covering the roadstead, or between Yasajah, the western island, and the little peninsula.

Approaching Vourlah from the westward of Chustan island, give the islet on the rocky shoal at its south-western part, a berth of 3 cables in rounding, then keep the southern Yilani islet in line with the south point of Kilsali, S. 55° E., until the little peninsula (near the roadstead) is open of the point north-north-west of it. Now steer a mid-channel course for the passage between Yasajah and the little peninsula, giving a berth of 2 cables to the sunken rocks westward of the north end of Yasajah.

When the south end of Yasajah and the north end of Penarli are in line, bearing S. 68° E., bring the highest part of Kilsali just open westward of the outer of the two islets at the northern end of Yasajah, bearing N. 5° E., which mark will lead over the bank extending from the south point of Yasajah island to the little peninsula, in the deepest water, between the 3-fathoms and 4-fathoms shoals already alluded to.

Plan, 1,617.
Var. 3° 50' W.

When approaching the roadstead, from the eastward of Chustan island, the passage between Yasajah and Akjadah is the wider, but a vessel should keep in mid-channel, and Yasajah should be given a berth of at least a quarter of a mile to avoid the shoal surrounding it. A shoal also extends three-quarters of a cable westward from Akjadah, but a mid-channel course will clear it.

The safest passage to Vourlah road, however, for a large ship, is eastward of all the Marathussæ group and between Penarli and the little islet of Injerli, giving a berth of 2 cables to the south end of Penarli. This channel between the 5-fathoms line one cable south of Penarli, and the same depth one cable north of Injerli islet, is 6 cables broad, with depths of 10 to 14 fathoms. The passage between Yilanejah and Penarli is limited by shoals extending into it from either island, and there is no occasion to use it.

Moor in Vourlah road with open hawse to the northward.

Water.—A plentiful supply of water is procurable from a spring on the coast, situated about a third of a mile south of the little peninsula.

Supplies of fresh provisions may be had at reasonable prices.

Plan, 1,522.
Chart, 1,645.

South shore of the gulf.—From Clazomenæ islet already described, the south shore of the gulf trends eastward about 12 miles to a low projecting point called Sanjak Kalessi, with a battery on it (Yeni Kale). The shore is backed by high hills, and 2 miles inland and 4 miles south-westward of Sanjak Kalessi, are two peaks of a mountain close together, 2,864 and 2,922 feet above the sea, named the Two Brothers, which form a prominent landmark. The shore is all along clear of danger, and may be approached to a reasonable distance.

Chart, 1,645.
Lat. 38° 45' N.
Long. 26° 45' E.

NORTH SHORE of the GULF.—CAPE HYDRA or Aslam burnu (see page 80) the eastern entrance point of the Gulf of Smyrna, is the bold termination of elevated land which at 3 miles south-eastward is 1,245 feet high. The cape is steep-to, and near the shore at about half a mile south-westward of it, is a little islet called Kartera with some rocks.

Plan, 1,566.

Iersis islet, about one-third of a mile in length, and narrow, with a large rock westward of its central part, and its southern part surrounded by a reef which is steep-to, lies $2\frac{1}{2}$ miles south-westward from Cape Hydra. Between this reef and a sunken rock close to the north point of Drepano, the passage is about a third of a mile wide, with 5 to 9 fathoms of water.

FOUJES HARBOURS.—North and South harbours of this name, may be said to be contained between Drepano island on the north and the headland of Dava burnu on the south, the north extreme of the former being $2\frac{3}{4}$ miles south-westward of Cape Hydra. The two harbours are separated by an irregular tongue of land two-thirds of a mile long, and by the islands of St. Georgio and Oglak. St. Georgio island and the tongue are joined by a ledge with 6 to 9 feet water on it.

FOUJES HARBOUR.



Chart, No. 2,836b.

Foujes town is situated at the head of South harbour and $1\frac{1}{2}$ miles from Dava burnu. Plan, 1,566.
Var. $3^{\circ} 50' W$.

Drepano island is rather more than a mile in length. It is joined to the shore on the east by shoal ground on which is situated a small flat islet, eastward of which is a narrow channel 2 fathoms deep, leading from the north into Foujes North harbour. The island lies north-west and south-east obliquely to the shore, and on its north-eastern side there are anchoring depths in 12 to 18 fathoms, mud bottom, and sheltered from the south-west. A low, hook-shaped, sand-spit, projects from the south point of Drepano island in a south-easterly direction 4 cables.

Peta.—The little islet of Peta lies almost due East from the north point of Drepano island, and $1\frac{1}{4}$ cables from a point, with which it is connected by a shoal. Shoal water extends also southward and westward one cable from Peta.

North harbour is somewhat circular in shape, the diameter of the area of deep water being about one-third of a mile. With the exception of the shore of the hook of Drepano, which is moderately steep, the harbour is bordered by shallow water, especially on the east side where not more than 2 fathoms will be found a quarter of a mile off.

Directions.—In entering North harbour, pass on either side of Oglak island, between which and the shoal water extending half a cable from the hook, there is a depth of 17 fathoms.

Caution.—The soundings in the Survey of this locality, not being in sufficient detail, caution must be used in approaching the shores.

Oglak island, moderately high, lies nearly midway between the outer extremes of Drepano island and Dava burnu. It is $3\frac{1}{2}$ cables in length by $1\frac{1}{2}$ cables broad, being of about the same size as, though lying in a contrary direction to, St. Georgio. It is separated from the latter, by a channel 2 cables broad, and 8 fathoms deep.

LIGHT.—From the western extremity of Oglak island, two *fixed white* lights placed vertically are exhibited; the upper light is elevated 105 feet above the sea, and they are visible in clear weather from a distance of 12 miles.

Deirmen burnu is the easternmost of two prominent points on the southern shore of South harbour, the western point having on it a Venetian fort, about midway between Dava burnu and the town. Deirmen burnu is separated from the town of Foujes by a well-sheltered basin about $3\frac{1}{2}$ cables in diameter, in which vessels may anchor in 10 fathoms over sand and mud, or secure to the shore. This basin is bordered all round by a narrow bank. A mile south-eastward from the town is a hill on which stand some windmills conspicuous from the offing. Lat. $38^{\circ} 40' N$
Long. $26^{\circ} 40' E$.

LIGHT.—A *red fixed* light is exhibited on Deirmen burnu, elevated 65 feet above the sea, and visible from a distance of 6 miles in clear weather.

South harbour is entered between St. Georgio island and the point with the Venetian fort 4 cables distant; thence, the harbour runs in one mile, with from 15 to 10 fathoms water, soft mud bottom, which is said not to hold well in the heavy south-easterly gales which blow out of the gulf, coming over the high land in a violent manner.

Plan, 1,566.
Var. 3° 50' W.

Dava burnu is a small dark clifty peninsula 112 feet high, appearing like an island, and united to the shore by a low sandy isthmus, with a little bay 10 to 5 fathoms deep, mud bottom, on its southern side.

Chart, 1,645.

Haji Liman.—This bay, between Dava burnu and Cape Merminji, and one mile from the latter, is three-quarters of a mile deep, a third of a mile wide, with from 15 to 5 fathoms water, and open to the west-south-west. The northern point of entrance is steep-to, but from the south point a reef extends nearly a cable in the direction of the northern point; and halfway in, on the southern side is another reef. At the head of the bay, is a brook of good water.

Lat. 38° 37' N.
Long. 26° 46' E.

CAPE MERMINJI bears S.S.E. $\frac{3}{4}$ E. and is distant $2\frac{3}{4}$ miles from Dava burnu. It is the termination of elevated land, which, at $1\frac{1}{2}$ miles north-eastward of it, is 1,030 feet high, and at $1\frac{1}{2}$ miles north-westward of this height is another hill 845 feet high. These elevations on either side of the head of Haji Liman, are known as North and South Wedge, and are conspicuous by reason of the land dropping suddenly on the south.

LIGHTS.—At 273 yards within the extremity of Cape Merminji, is an octagonal white tower, from which is exhibited, at 230 feet above the sea, a *white* and *red fixed* light. The *white* light is visible in clear weather from a distance of 22 miles, and the *red*, 14 miles. For sectors see Light List, Part V. and chart.

In the same tower, and below the above light, is a *fixed green* light, seen through an arc of 33°, and visible about $1\frac{1}{2}$ miles beyond the Merminji rocks which it covers.

Merminji rocks.—This dangerous ledge of rocks shows in places 2 feet above water and is about a quarter of a mile in extent, with 10 and 8 fathoms all round the shoal. It lies about two-thirds of a mile from the nearest shore (red cliffs) of Cape Merminji, and midway there are 11 fathoms water; but between the ledge and the extreme of the cape is a shoal patch with 3 fathoms on it. During the day, these rocks will be seen, and the west end of Oglak island N. $\frac{3}{4}$ W., well open westward of Dava burnu, leads outside them.

At night, the position of the rocks will be known by the *green* light shown over them from Merminji lighthouse.

AGGRIA BAY.—**Panagia point** is $2\frac{1}{2}$ miles nearly, east-south-east of Cape Merminji, and between is a projecting point with a large rock or islet close to it, eastward of which is a small bay. From Panagia point, the shore trends north-eastward $2\frac{1}{2}$ miles, then south, and south-eastward, forming the bay of Aggria, which is very shallow, with all its inner part an extensive fishery, and an inconspicuous islet with ruins on it in the middle.

Anchorage with good shelter and holding ground will be found on the north side of Aggria bay, about midway between Cape Merminji and Panagia point, during north and north-easterly winds.

Coast.—From Panagia point to Cordaleo, opposite the city of Smyrna, the coast line consists of a low marshy broken shore, with numerous salt pans backed by extensive plains on which wheat is grown during the summer, but which are flooded in the winter. At about $5\frac{1}{2}$ miles south-south-eastward from Cape Merminji, this broken coast extends westward, forming what may be considered the southern entrance point to Aggria bay.

This point, $2\frac{1}{2}$ miles broad, is (compared to the rest of this low broken shore) fairly steep-to, the 5-fathoms line being found at from 6 cables to a mile off. The limit of Cape Merminji *red* light nearly coincides with this line. Chart, 1,645.
Lat. $38^{\circ} 50'$ N.
Var. $3^{\circ} 50'$ E.

To prevent further silting up of Smyrna harbour a canal has been cut to divert a portion of the water of the River Khediz into Aggria bay; the mouth of this canal is 4 cables southward of Aggria islet.

Kokala burnu or Fishery spit.—From the broad south entrance point of Aggria bay, the low broken up shore of Smyrna gulf continues first south-eastward, then south and south-westward for some 6 miles to Kokala burnu, forming a bight $1\frac{1}{2}$ miles deep, from the shores of which with the exception of the extreme points themselves, not more than 5 fathoms will be found $1\frac{1}{2}$ miles distant. Plan, 1,522.
Lat. $38^{\circ} 27'$ N.
Long. $26^{\circ} 55'$ E.

The end of the drying portion of Kokala burnu bears N.W. $\frac{1}{2}$ W., and is distant $3\frac{1}{4}$ miles from Yani Khediz or Pelican spit.

The 10-fathoms line passes half a mile from Kokala burnu spit, and a vessel should not approach nearer the point, as the water shoals suddenly to 3 fathoms one cable further in.

Paleo Khediz spit.—The low irregular shore between Kokala burnu and Yani Khediz spits, takes the form of a slight bight, off the middle of which, the shoal water under 3 fathoms extends one mile from the shore, under the name of Paleo Khediz spit. The outer part of this spit in the depth above mentioned, bears nearly W. by N. $\frac{3}{4}$ N. $1\frac{1}{2}$ miles from the dry end of Yani Khediz spit. A tongue with depths under 5 fathoms, extends a quarter of a mile farther out.

Yani Khediz or Pelican spit, is the name given to the most southerly portion of the low broken-up north-east shore and delta of the River Khediz, the principal mouth of which river, formerly emptied on the spit, but which has now been diverted to Aggria bay.

LIGHT-VESSEL.—A light-vessel painted red is moored in 10 fathoms water, off Yani Khediz or Pelican spit. The vessel exhibits two *white fixed* lights, placed vertically, the upper 49 feet above the sea, and visible in clear weather from a distance of 10 miles. The light-vessel bears W. $\frac{1}{4}$ S., distant $3\frac{2}{10}$ miles from Sanjak Kalessi light-house. Lat. $38^{\circ} 25'$ N.
Long. $26^{\circ} 58'$ E.

Ships should pass south of this light-vessel.

Clearing marks.—The flat hill west of Port Iero (Mitylene), open westward of Dava burnu, N. 22° W., leads westward of the northern portion of the banks extending from the north-east shore of Smyrna gulf. Mimas peak seen between the two northern peaks of Chustan island, bearing N. 51° W., leads south-westward of Kokala burnu or Fishery spit, and Paleo Khediz spit.

The extreme of Sanjak Kalessi in line with a remarkable conical peak east of Smyrna, bearing N. 83° E., leads southward of Yani Khediz or Pelican spit.

SMYRNA HARBOUR.—North shore.—This shore which may be said to commence at Yani Khediz or Pelican spit, partakes to within $1\frac{1}{2}$ miles of Cordaleo point, of the same low marshy broken character as the shore westward of Yani Khediz, being in fact the delta of the River Khediz, several mouths of which formerly debouched into the bay between these points.

The irregular and undefined coast-line trends generally in a north-east-by-east direction 7 miles, and then with a more defined character

Plan, 1,522.
Var. 3° 50' W.

about $2\frac{1}{2}$ miles, to Cordaleo point. In consequence of change in the outlet of Khediz river, the bay thus formed is now occupied by shoal water, with numerous small islands, some covered with rushes, and some composed of bare sand.

Sanjak spit is the name given to the southern part of an extensive flat in the bay just mentioned, its southern extremity with depth of 3 fathoms bearing E. $\frac{1}{2}$ N., $3\frac{1}{10}$ miles from the dry end of Yani Khediz spit.

Between Yani Khediz and Sanjak spits, and at nearly equal distances, are the south extremes of two other shoal tongues called Basake and Swan spits, the first named being one cable, and the last, 2 cables northward of the line joining Yani Khediz and Sanjak spits.

Lat. 38° 25' N.
Long. 27° 2' E.

LIGHT-VESSEL.—A light-vessel painted red, is moored south of Sanjak spit in 5 fathoms, and exhibits two *white fixed vertical* lights, the upper 49 feet above the sea, and visible in clear weather from a distance of 10 miles.

This light-vessel bears N.N.E., and is distant 4 cables from Sanjak Kalessi lighthouse on the opposite side of the channel, which, between the 5-fathoms lines, is here limited to a breadth of 3 cables, the depth being 7 to 9 fathoms.

Caution.—Discoloured water has been reported to extend half a cable south-eastward of Sanjak spit light-vessel.

Wreck.—A sunken vessel lies 2 cables due West from Sanjak spit light-vessel; in February, 1899, she was lying in 16 feet water with a portion of the mast showing.

Five-fathoms line.—This contour line in 1890, ran E. $\frac{1}{2}$ N. for one mile from Sanjak spit light-vessel, then follows the tacking mark, viz., Mount Sipylus just open east of Menimen Skala, N. 40° E. for $1\frac{1}{2}$ miles, whence it trends E. $\frac{1}{4}$ S. $2\frac{3}{4}$ miles to the end of the spit $2\frac{1}{2}$ cables south of Cordaleo point.

Kathura spit is the name given to the flat eastward of Sanjak spit, northward of the first two trends of the 5-fathoms line just given, and which the tacking mark leads south-eastward of.

South shore.—**Sanjak Kalessi** on the south shore, is $5\frac{1}{2}$ miles westward of Smyrna inner harbour. It is easily recognised by Yeni Kale fort, and by the lighthouse.

Shoal water under 5 fathoms extends three-quarters of a cable from the lighthouse.

LIGHT.—From an iron staff on a dwelling near the extremity of Sanjak Kalessi, are shown two *red fixed* lights placed vertically. The upper light is 49 feet above the sea and visible in clear weather from a distance of 6 miles.

Clearing mark.—The shoal water extending from Sanjak Kalessi, is cleared by keeping the remarkable sharp peak (eastward of Smyrna) open a little north of Agios Joannis cupola N. 85° E. This mark leads also to the anchorage off the town.

Lat. 38° 25' N.
Long. 27° 5' E.

Jackal point is 2 miles eastward of Sanjak Kalessi, the coast line of the shallow bight between them, forming a slight curve; there are some huts close to the extremity of the point.

Shoal water extends from Jackal point a quarter of a mile, and may be cleared by keeping Kuklijah cliff, 1,064 feet high (A on chart No. 1,522), just northward of the south end of the barracks S. 84° E. The cliff is not easily distinguished, being backed by higher land, which prevents its being seen when the sun is behind it. The barrack is a long white building near the water. Plan, 1,522.
Var. 3° 40' W.

Keos Tepeh bay is the name given to an indentation 2 miles broad immediately eastward of Jackal point. The suburb of Kalifatia is situated upon its eastern point.

From Kalifatia, the shore of the suburbs and city of Smyrna, extends nearly straight $2\frac{3}{4}$ miles to Daragaz point, whence the coast turns to the east-south-eastward for $1\frac{1}{4}$ miles, then north for 2 miles forming the head of the gulf. It then runs westward for $2\frac{1}{2}$ miles to Cordaleo point already alluded to.

The depths gradually decrease to the head of the gulf.

INNER HARBOUR.—In front of the city, is a well constructed embankment of blocks of concrete, $1\frac{1}{4}$ miles in length, and 60 feet wide, along the sea face of which there are from 2 to 4 fathoms water. At the south end, near St. Peter's castle, the Custom-house pier, about 220 yards in length projects north-westward, between which, and the south angle of the breakwater is a passage 130 feet wide; the breakwater then extends in a northerly direction about 450 yards, and north-easterly 200 yards. From the corner of the embankment abreast the north extreme of the breakwater, a pier 160 yards long extends towards the latter, leaving a passage between them about 80 yards broad. This is the north entrance of the inner harbour which has an area of about 40 acres, and depth both in the entrances, and in the harbour generally, of about 33 to 36 feet; there is a depth of 15 to 18 feet alongside the quays. From the south angle of the breakwater an arm extends in a south-west direction 340 yards. Plan on 1,521.

Caution.—Entering the inner harbour by the south entrance, the south-west extremity of the breakwater must not be rounded too closely, on account of some submerged steps.

Men-of-War.—The usual berth in the inner harbour, for men-of-war, is under the north pier, on the inner portion of which stand the Port and Health offices. Vessels lie parallel to this pier, with anchors ahead, and sterns hawsers to the quay.

The depth in the south entrance is about 22 feet; some mail-steamers use it, and at their own risk, as the port authorities do not guarantee this depth.

LIGHTS.—The northern entrance to the inner harbour, is marked by a *red fixed* light on each side, shown from posts. These lights are only shewn when sail steamers are expected. The eastern light is changed to *green* when a vessel has permission to enter. Lat. 38° 26' N.
Long. 27° 9' E.

Regulations.—To enter the inner, permission has to be obtained from the Port Authorities. When granted, an officer is sent on board to berth the ship and a *green* flag is hoisted. A *red* flag is hoisted when a vessel is going out. Before scraping a ship's bottom, permission must be obtained from the Port office.

Anchorage.—A good berth can be taken up in 8 to 10 fathoms from half to three-quarters of a mile westward of the north end of the breakwater. Vessels are not allowed to anchor eastward of a line Plan, 1,522.

Plan, 1,522.
Var. 3° 40' W.

running North from the north end of the breakwater. The Austrian Lloyds' and merchant steamers generally go into the inner harbour, where cargoes can be discharged and shipped alongside the wharf, where there is every convenience. The harbour fees are fairly heavy; vessels of war are free from charge.

Piers.—On the west side of Daragaz point is a small pier belonging to the Smyrna Steam Flour Mills; and on the north side the pier of the Smyrna-Aidin Railway, 600 yards long, with an arm 200 yards long, having a depth of 28 feet at its end. Vessels drawing 24 feet load alongside the arm of the latter.

Chart, 1,645.

DIRECTIONS.—There is no difficulty in the navigation of Smyrna gulf, the leading-marks being clearly distinguishable. Sailing-vessels generally enter with a fair wind, and should endeavour to be at the entrance before noon so as to get the first of the sea breeze, which if strong, will carry them to the anchorage. It is advisable to keep along the eastern side of Chustan or Long island at the distance of one or 1½ miles, and when abreast of Kilsali island, to steer for the Two Brothers (*see* page 194), and keep close along the southern shore, which is all steep-to.

To clear the shoal water bordering the low shore on the eastern side of the entrance to the gulf, keep the flat hill westward of Port Iero in Mitylene, N. 22° W. open westward of Dava burnu. The flat hill in line with this headland, leads over the Merminji rocks. Should the wind be from south-west, do not keep away too soon after passing Chustan island, as it will draw off the hills from south, and from south-east, on nearing Sanjak Kalessi.

The peak of Mimas seen between the two northern peaks of Chustan island bearing N. 51° W., leads southward of Fishery and Paleo Khediz spits; in approaching Pelican spit, which will probably be known by the discoloured water, the light-vessel will be the best guide, but a remarkable conical peak eastward of the city of Smyrna in line with the northern end of Sanjak Kalessi N. 83° E. leads southward of the spit. (*See* view A on chart, No. 1,522.)

Plan, 1,522.
Lat. 38° 25' N.
Long. 26° 53' E.

When about a mile eastward of Pelican spit light-vessel, edge to the northward, and bring the remarkable conical peak a little open northward of Agios Joannis cupola, bearing N. 85° E.; this mark will lead between Sanjak Kalessi point and Sanjak spit, and clear of the shoals on either side to the anchorage. The Pelican spit light-vessel, S. 83° W. midway between the Sanjak spit light-vessel and Sanjak Kalessi lighthouse, also leads to the anchorage in mid-channel.

A vessel standing towards the flats extending from the north shore should keep Mount Sipylus (which has a black appearance, from the trees on its summit) open eastward of Menimen skala, bearing N. 40° E., but should not stand further northward than a distance of three-quarters of a mile north-eastward from the south-east extreme of Kathura spit. The best time for leaving Smyrna in a sailing-vessel, is with the first of the land wind, about one o'clock in the morning.

Chart, 1,645.

At night.—In entering the gulf at night, the position of a vessel will be known by the bearings of Merminji light; a mid-channel course (about S.S.E.) should be preserved, and in proceeding to the southward, Cape Merminji *red* light should not be brought westward of a N. ½ W. bearing until 6 or 7 miles southward of it, so as to avoid the shoal water bordering the low eastern shore. When at the above distance from the light, a vessel may edge a little to the eastward, but Cape Merminji *red* light should not be brought westward of N. by W.

Chart, No. 2,836b.

When the Pelican spit lights bear about S.E. by E. $\frac{1}{2}$ E., they will be nearly in line with Paleo Khediz spit, and by bringing the light to bear northward of East, Paleo Khediz spit will be passed at the distance of half a mile. Plan on 1,522.
Var. 3° 40' W

Pelican spit light-vessel should be passed at the distance of a quarter of a mile, with Sanjak Kalessi lights bearing E. $\frac{5}{8}$ N. When about a mile to the eastward of Pelican spit lights, edge to the northward, and steer midway between Sanjak Kalessi, and Sanjak spit lights, with Pelican spit lights astern. Pelican spit lights, kept midway between Sanjak Kalessi, and Sanjak spit lights, S. 83° W., will lead clear of the shoals on either side to the anchorage, when a berth may be taken as convenient, westward or north-westward of the breakwater, as before stated.

SMYRNA.—The city of Smyrna (called by the Turks *Ismir*) at the head of the gulf, is built at the foot of Mount Pagus, on the summit of which are the walls of a ruined castle. Like most Turkish towns, it has an agreeable appearance from seaward, and contains some well-built houses, which belong principally to foreign merchants. The houses are chiefly of wood, with brown roofs without chimneys, but those belonging to the Christians are distinguished from those of the Turks by being built of stone, and the eaves of many of them almost meet across the street, which are narrow and dirty. The warehouses on the marina are whitewashed, and no house in the town is above one storey high. Lat. 38° 26' N.
Long. 27° 10' E.

To its position, Smyrna owes the rank it holds among the most important trading places in the world. The extent and safety of its roadstead, and the facility of its communications with the interior, have made it the general emporium of the Levant.

In the immediate neighbourhood, are the pretty villages of Bour-nabat, Bujah, and Sedikioi, where the country seats of the consuls and merchants are situated. In the evenings, thousands of well-dressed people promenade the marina, listening to the bands, &c.

The suburbs have extended greatly during the last few years, the houses now fronting the shore to the south-westward as far as Kalifatia, and tramcars run from the railway station at Daragaz point along the shore as far as Keos Tepeh, a village about a mile westward of Kalifatia.

On the northern shore of the harbour, a large village has lately sprung up named Cordaleo. It is considered a healthy resort, and much frequented by the inhabitants of Smyrna; there are several landing piers, some bath-houses, and a marine promenade.

The Frank and Greek quarter extends along the shore, and contains many shops, warehouses, and coffee-houses. The Armenians occupy a more elevated position. The Turkish quarter comprises the whole of the upper part of the city, and the western side of the hill. The Jewish quarter is between the Turkish and Armenian quarters. In a magnificent casino built by subscription, are all the principal periodical publications of Europe. Among the many public buildings, there is a Greek college, and a theatre.

Population.—Smyrna is thickly inhabited, and was estimated to contain in 1907 a population of about 300,000 of which 145,000 were Greeks. Each nation is exempt from Turkish rule, and protected by its own Consul.

Trade.—The imports consist of alcohol, cotton, and manufactured goods, leather, hides, iron, coal, coffee, sugar, petroleum, hardware, rice, silk, timber, &c., and were valued in 1905-6 at 3,860,000*l*. The principal exports are dried fruits, valonia, grain, wool, cotton, carpets,

Plan on 1,521.
Lat. 38° 28' N.
Long. 27° 10' E.
Var. 3° 40' W.

skins, opium, olive oil, tobacco, liquorice, and emery; and were valued in 1905-6 at 5,930,000*l.*; of which 2,590,601*l.* went to the United Kingdom.

Shipping.—In 1906, 2,643 steam vessels of 2,286,177 tons, and 3,106 sailing vessels of 84,040 tons entered the port of Smyrna; of these 275 steam vessels of 427,390 tons, and 8 sailing vessels of 214 tons were British.

Quarantine.—Vessels arriving with a foul bill of health, or unprovided with a bill of health, are subject to quarantine, which is performed at Vourlah. Passengers are disembarked at the lazaretto on Clazomenæ islet (*see* page 193).

Climate.—The summer heat is very great, but is generally tempered by a fine westerly breeze named the “*imbat*,” which continues from about 10 a.m. till sunset. Occasionally, however, hot winds blow from the south and parch the country; persons should avoid sleeping on deck if the season is unhealthy, especially during a gentle breeze off the shore.

Winds.—The predominant winds are from north to east, the greatest force being from north-north-east. The sea breezes may be expected from May to September, alternating with the land wind at night. Winds from west to north are light and it frequently happens that while a westerly wind is blowing at about 10 miles westward, an easterly wind prevails at the anchorage, with a calm between. Once every two or three years, a heavy gale occurs, but lasts only a few hours. (*See* also page 6.) The mean sea level falls with a northerly gale, and rises with a southerly gale.

For result of observations at Smyrna extending over several years, *see* Meteorological Table, appendix, page 342.

Seamen's hospital.—The prevailing diseases are bronchitis, fever, ague, and diphtheria. British vessels pay 1½ pence per ton for the support of the seamen's hospital, and their sick are admitted free of expense; other British subjects, and foreigners, are admitted on the payment of 3*s.* 6*d.* per diem. There is also a seamen's rest, or coffee house.

Water.—The facilities for watering at Smyrna are very good; there are several tank-vessels carrying from 10 to 15 tons each, constantly employed, and as they obtain their supply from an artesian well near the Health office, vessels are quickly supplied with the quantity required. Water is also brought into Smyrna from Paradise by aqueducts, and distributed by leaden pipes.

Good water can also be obtained from an outlet near the Smyrna-Kassala Railway Co.'s pier.

Repairs.—There is every facility for repairs of ships and machinery. There is a 10-ton steam hammer, and castings can be made up to 2 tons. The Smyrna and Aidin Railway Company at their wharf have a crane capable of lifting 10 tons. Thirty-inch cylinders can be cast and bored.

Patent Slip.—There is also a patent slip with a lifting power of 500 tons, but no dry dock.

Coal.—There is every facility for coaling at Smyrna, only the best Cardiff being obtainable, of which there is usually about 7,000 tons in stock. About 75,000 tons of coal are imported annually. About 2,800 tons can be delivered, working day and night, by means of lighters and pontoons carrying about 100 tons each. To ships not in the inner harbour, strong winds, which occasionally blow, stop all communication with the shore, and coaling is then difficult.

Supplies are plentiful and prices moderate. A regular contractor supplies His Majesty's ships with coal, provisions, &c.

Pilots.—There is a pilot station in Smyrna. No persons other than those holding a certificate of qualification (written in Turkish, English, French, Greek, and Italian) from the Ottoman State have any authority to practise as pilots.

Pilot boats are usually to be found off Yani Khediz.

Consul.—The British Consulate is in Frank street; there are consuls for all the European Powers in Smyrna.

Communication.—Steamships connect with Liverpool, Marseilles, Trieste, Peiræus, Alexandria, Syria, Constantinople, and Odessa. There is also frequent connection with Rhodes, Crete, and the principal Turkish ports and islands of the Ægean Sea. (See also paragraph on steamships, page 3.)

Railways.—The Smyrna and Aidin line of railway runs from the station near Daragaz point, to Turbali, Ephesus, Aidin, Serakioi, Dinair, and Chevril, the whole distance being about 240 statute miles. From Turbali, a branch runs to Tireh and Udemis. The same company also works the Smyrna suburban lines to Bujah and Sedikioi.

The Smyrna and Kassaba railway runs to Manissa, Kassaba, Alascheir, (Philadelphia), and Afium kara Hissar, a distance of about 300 miles. From Manissa, a branch goes to Ak-hissar (Thyatira) and Soma. From Afium kara Hissar a branch runs to Eskishehr, connecting from the main line from Constantinople and Ismid to Angora. This same company also work the Smyrna suburban line to Bournabat. The railway station of this company is near the centre of Smyrna. (See also paragraph on railway communication, page 3.)

Telegraph.—There is telegraph communication with Constantinople, Malta, Alexandria, Cyprus, and consequently with all parts of the civilised world, including the principal islands of the Archipelago. (See also paragraph on telegraphic communication, page 3.)

Tides.—The tides and currents are irregular. At full and change, it is high water on the shore, in the strait of Khios, at 2h.; at Chustan island, 3h.; at Smyrna, 5h. 30m., and sometimes 4h.; this is owing to the sea breeze, which at times impels the current and increases its height. At Smyrna, the sea level varies 3 or 3½ feet, but at Khios and places adjacent only 2 feet. (See also page 9.)

CAPE BIANCO.—Cape Bianco (ancient *Argennum* prom.), as its name implies, consists of white cliffs of moderate elevation, conspicuous from the south-westward, and in shape somewhat resembles the Bill of Portland, on the south coast of England. The south-western face of the cape is bordered at a short distance by shoal water, and its northern extremity is also bordered by a rocky shoal, which extends off nearly 2 cables. The distance, however, between the rocky shoal and Panaghia islet westward of it, is three-quarters of a mile.

Anchorage.—There is anchorage south-eastward of Cape Bianco in any convenient depth, sandy bottom, which is much frequented by vessels unable to get through Khios strait during strong northerly winds. Vessels anchoring here, should be prepared to get under weigh before a southerly wind sets in, and care should be taken to avoid the rocky patches before mentioned, by choosing a berth in not less than 10 fathoms, within half a mile of the Wedge or southern extreme of the cape. If farther south-eastward, a vessel should not go inside the

Plan, 1,521.
Lat. 38° 26' N.
Long. 27° 10' E.
Var. 3° 40' W.

Chart, 1,645,
1,522.

Chart, 3,446.
Lat. 38° 16' N.
Long. 26° 15' E.
Var. 4° W.

Chart, 3,446.
Var. 4° W.

line joining the extreme points of the bay, or within a depth of 16 fathoms.

From Cape Bianco the coast trends about S.E. by E. 7 miles to port Egrilar. The soundings off this part of the coast are irregular; shallow water will be found in places some distance from the shore, and it should be given a wide berth. In the bay which the coast forms south-eastward of Cape Bianco, are four small rocky patches having from one to 4 fathoms water on them; they each lie about 4 cables from the shore, and between the distances of a little less than a mile and 2 miles eastward of the Wedge with deep water between them.

Plan on 1,568.
Lat. 38° 15' N.
Long. 26° 24' E.

Port Egrilar.—Port Egrilar extends $2\frac{1}{4}$ miles in a N.N.E. direction, and is a mile wide at the entrance, but narrows to half this distance within; inside, the depths are from 15 to 6 fathoms water, mud bottom, but its shores are bordered all round by shallow water, especially near the head, where a large portion is nearly dry. Great caution is therefore necessary on entering, to keep in mid-channel, as the soundings are not in sufficient detail and there are no good leading-marks for avoiding the shoal banks, which, however, on a bright clear day, are plainly indicated by the discolouration of the water.

The eastern point of entrance to the port, is a white cliff, and the hill immediately over it is 146 feet high; on the western side, nearly half a mile northward from the western entrance point, is a sharp peak 264 feet high. (See view of the entrance to Port Egrilar, on chart No. 1,568.)

Egrilar, chiefly composed of store houses for dried currants, is near the head of the port, on the western shore, with a pier and Custom house. The land on either side is hilly, but at the upper part of the port it is low, dry in summer, but marshy in winter, when a stream runs into it. The town of Latzata containing about 15,000 inhabitants, is $1\frac{1}{2}$ miles northward of the village, but hidden from the anchorage by a range of hills; a good road from Egrilar leads to it. The town of Latzata suffered greatly from an earthquake on 3rd April 1881.

Plan on 1,635.

Port Mersin.—From Port Egrilar to Port Mersin the coast is nearly straight in a south-easterly direction, for 3 miles, but it should not be approached too closely. Port Mersin (*Myrtle cove*) is $1\frac{1}{2}$ miles in length in a N.N.W. direction, and from one mile to half a mile in breadth, having from 12 to 6 fathoms water. It is fronted by three islands and sheltered from all winds, except from the S.S.E. through the narrow entrance. The two inner islands are united by rocks to the shore on either side. A small islet lies nearly midway between these two islands and is connected to the western one by a bank of 3 fathoms. The passage into Port Mersin is between the little islet and the eastern island; it is $1\frac{1}{2}$ cables wide and 11 fathoms deep.

Tavates island, the southernmost of the three, is distant from the island north-westward of it a third of a mile, with depths of 4 fathoms between, but in the middle there is a rocky shoal with less than 6 feet water on it. Small vessels may pass between the islands, avoiding the rocky shoal, but the ship passage is southward of Tavates island, and eastward of the islet between the two inner islands.

A shoal with rocks above water, extends 2 cables southward of Tavates island, which should be given a fair berth in rounding.

Lat. 38° 11' N.
Long. 26° 32' E.

Port Sikia (*Fig tree*) is rather more than 3 miles south-eastward of Port Mersin; the coast between is irregular, rugged, and steep-to;

midway there is a small bay with a depth of 7 fathoms, open to the south-westward. Port Sikia extends in about one mile north-eastward, and is one-third of a mile wide with two small arms at its head, where one or two little streams run into the sea. There are from 10 to 5 fathoms water in the middle of the port, but it is exposed to the south-west; there is, however, just within the entrance on the south-east side, a well-sheltered inlet with from 7 to 3 fathoms, suitable for small craft. The steep white cliffs on the north-western side of the entrance mark the locality. Plan on 1,635.
Var. 4° W.

Kavaki bay is 4 miles south-eastward of Port Sikia, the coast between being irregular, but steep-to. Kavaki bay runs in northward nearly $1\frac{1}{2}$ miles; it is nearly two-thirds of a mile wide at the entrance, converges within, is clear of danger, and carries from 55 fathoms in the entrance to 5 fathoms near the head. Chart, 3,446.

CAPE KORAKA (ancient *Korykeion* prom.) is a high bold headland, the southern termination of Mount Korykos which about $5\frac{1}{2}$ miles inland rises 2,328 feet above the sea, the land about two-thirds of a mile within the cape being 1,280 feet high. Viewed from any direction seaward, the cape is a prominent object and the water is deep close to its base.

SIGHAJIK BAY.—The western and northern shores of Sighajik bay are irregular, and form several little bays or coves. On the western side and two miles northward of Cape Koraka is Port Vromo, an inlet extending nearly a mile north-westward, having in the central part from 25 to 10 fathoms, and deep water close to the shore. Coasting vessels occasionally enter the port.

About 3 miles to the northward of Port Vromo are some remarkable white marks on the coast.

On the north shore, and about 2 miles eastward of the north-west corner of the bay is Port Erekevi, an inlet nearly half a mile in extent, 7 to 10 fathoms deep, with a sandy beach.

Sighajik harbour, in the north-eastern corner of Sighajik bay, is about three-quarters of a mile deep in a south-easterly direction, with from 6 to 8 fathoms over sand and mud; in the entrance, the depths are 10 to 12 fathoms between Sighajik island and the bold coast of the mainland to the northward. Plan on 1,878.
Lat. 38° 12' N.
Long. 26° 48' E.

Sighajik island, on the south-western side, is 2 cables in length, with Island reef extending three-quarters of a mile from its north-west extreme. Kyleh point, eastward of the island, and the southern entrance point of the harbour, in line with the south side of Quarry hill (about 200 feet high somewhat like the frustum of a cone, distant one mile from the town in a south-easterly direction), bearing S. 62° E., leads northward of the reef.

In the narrow channel between the island and Kyleh point, the depth is 12 to 15 feet, but nearly in the middle is a rocky shoal with as little as 3 feet water on it.

Directions.—Anchorage.—Approaching the harbour from the south-westward, Cape Koraka, the western point of entrance to Sighajik bay, although bold with deep water close-to, should be given a wide berth in a vessel under sail, to avoid the baffling winds frequently encountered in its vicinity. The harbour is not easily distinguished at a distance, but its position will be known by a deep valley about 2 miles westward of it, which appears like an opening in the

Plan on 1,878.
Var. 3° 50' W

land. From the south-eastward, a white patch near the summit of the hill on the western side of this valley, is a good mark.

Having rounded Sighajik island reef with the mark given above, steer in about mid-channel; the anchorage is in about 8 fathoms, good holding ground, and well sheltered. During fine weather, vessels may anchor outside the harbour in from 15 to 20 fathoms, about S.W. by W. from Sighajik island, when, should the wind blow hard from the south-west, the harbour will be under the lee.

Sighajik town at the head of the harbour is of some commercial importance, and from it supplies of beef, poultry, fruit, and water may be readily obtained. It is about 20 miles from Smyrna, with which city it is in frequent communication.

Sailing-vessels bound to Smyrna, and unable in consequence of strong northerly winds to pass northward of Khios, or to work through Khios strait, frequently anchor in Sighajik harbour, and send their goods overland to that city.

Chart, 3,446.
Lat. 38° 10' N.
Long. 26° 48' E.

Chelik point, 2 miles to the southward of Sighajik harbour, is bold and steep-to, the coast between being irregular, about 200 feet high, and with deep water about a quarter of a mile from it. On the plain at the rear of the ridge are the ruins of Teos.

Teos bay to the eastward of Chelik point has depths of from 5 to 10 fathoms, but in the middle of the entrance there is a shoal patch with a depth of 3 fathoms.

Malkiar bay is separated from Teos bay by a tongue of shallow rocky ground projecting southward from the shore upwards of one mile, upon which are three islets; on the inner and largest of these, are some ruins.

There is a depth of from 5 to 10 fathoms in the bay, but it, as well as Teos bay, is exposed to the southward.

Malkiar head, the south extreme of the bay, is conspicuous from its green cliffs; it is bordered by shallow water.

Palamo islet, a mile to the southward of Malkiar head, lies close to the shore and has some ruins on it.

COAST.—From Palamo islet, the coast trends 6 miles to the southward to Bolemo islet, the eastern extreme of Sighajik bay. At 5 miles from Palamo islet, is a bold projection, 190 feet high, and covered with ruins, named Ovraeo Kalessi; it is joined to the coast by a neck of land, on either side of which is a little bay. In the northern one, small coasting vessels anchor off a sandy beach, in from 4 to 2 fathoms water.

GULF of SKALA NUOVA.—**Bolemo islet** (ancient *Makris*).—At the southern termination of the promontory forming the eastern side of Sighajik bay, is a bold and rocky islet; it fronts a little cove, and together with the point eastward of it, forms a small harbour, 3 fathoms deep; rocky shoal ground extends about a cable from the south, and west sides of the islet. On the shore at the head of the cove, are some hot springs. At 3 miles within, the land is 910 feet high, and 1½ miles beyond, 1,345 feet above the sea.

Hypsili islet, about a quarter of a mile in extent, and 186 feet high, lies 5½ cables S.S.E. ½ E. from the termination of the promontory; some rocks above water, lie close to the southern point of the islet. Between the islet and the main, there are from 10 to 20 fathoms.

A rock which shows, lies about 2 cables off the eastern part of the islet, with 5 fathoms water between them, and 8 fathoms close outside the reef. Chart, 3,446.
Var. 3° 50' W.

Lebedos bay is 10 miles across from Bolemo islet to Cape Bugali, and is backed all round at a distance of from 3 to 4 miles by mountainous land, Mount Alewan over the eastern part being 2,940 feet high. The water all round is rather deep for anchoring, excepting within half a mile of the shore, and it is completely open to the southward.

In the centre of the head of the bay, is a small round projection (once the islet of Xingi) united to the beach by a neck of sand, on which are some ruins, and on the adjoining shore are the ruins of ancient Lebedos, whence the bay derives its name.

At $2\frac{1}{2}$ miles to the south-eastward of Xingi, the River Malkeji enters the sea through a small low delta. At half a mile to seaward of the extreme of the delta is the little islet of Pondiko, with a depth of 18 fathoms between it and the shore. At $3\frac{1}{2}$ miles to the south-eastward of Pondiko is Cape Bugali, the end of a projecting tongue of land, and the eastern extreme of Lebedos bay.

Coast.—From Cape Bugali, the coast as far as Ghiour Kioi bay, a distance of 6 miles, is irregular, with small bays and points with ruins and a few villages.

Ghiour Kioi bay (ancient *Klaros*).—In case of necessity during off-shore winds, a vessel may drop an anchor for temporary purposes in Ghiour Kioi bay westward of the village, but close inshore, as the water is deep; there is no shelter from the southward. There is a good road from here to Smyrna through a fertile country, and the journey on horseback occupies about 8 hours. Lat. 38° 0' N.
Long. 27° 13' E

From Ghiour Kioi bay the coast curves round to the east and south for 5 miles to the Kuchuk Mendere. At first the coast is hilly and rocky; but the latter part is low, and within it is a large lagoon which communicates with the sea, with a plain behind it. The low shore is bordered by a bank which extends off about half a mile, and the soundings are irregular.

Kuchuk Mendere (ancient *Caystrus*) is fronted by a bar, and interrupted by fishing weirs. The stone embankments, which once confined the river, are in many places still visible, but the landmarks at the termination of the embankments are now at a considerable distance from the sea, and the space between them and the beach is an unwholesome marsh.

The land in the vicinity of the river's mouth is low and covered with rushes, but three-quarters of a mile from the shore and the same distance south of the river, is a hill 750 feet high, and a cultivated plain behind it. At about half a mile off the shore, there are from 10 to 18 fathoms water, muddy bottom.

Ruins of Ephesus.—At about 3 miles from the sea, on the southern bank of the river, are the extensive ruins of Ephesus, at one time the largest and most frequented city in Asia Minor, but now presenting little but scattered and mutilated remains of its ancient grandeur. Christianity was established in the city by St. Paul, and Ephesus became one of the seven churches of Asia. St. John resided here, and probably died here: his tomb is shown near the quarries on Mount Prion. A little way above the site of Ephesus, is a bridge of seven arches, through which the river winds clearly and without impediment. The sides of the mountains are in some places very precipitous, and in others, scooped into hollows filled with large trees.

The population of the modern town is only about 400, and it is an unhealthy place with few facilities.

Chart, 3,446.
Var. 3° 50' W.

Anchorage.—For the purpose of visiting the ruins of Ephesus, temporary anchorage, in fine weather, will be found on the bank stretching off Kavo Mikron Taliane, a point 2 cables north-west of the ruined bridge at the northern end of the low shore. The bridge should be brought to bear E.N.E. distant about a mile; a square ruin (St. Paul's prison) on a hill 375 feet high, about E.S.E., and the entrance to the Kuchuk Mendere and place of landing S.E. $\frac{1}{2}$ E. nearly, distant $1\frac{1}{4}$ miles. In coming to an anchor the lead should be kept going; this anchorage is considered preferable to that of Skala Nuova. It is advisable to land on the north side of the river, and to cross it about half a mile up where it is 40 yards wide, in a ferryboat. It is about an hour's walk from the beach to St. Paul's prison, and an hour and a half to the centre of the ruins near a large archway.

Communication.—Ephesus is connected by railway with Smyrna, and with a town called Dinair, 186 statute miles (by rail) eastward of Ephesus. It is also in connection with the European telegraphic system.

Charts, 3,446,
1,546.
Lat. 37° 52' N.
Long. 27° 17' E

Skala Nuova or Kus adasi town stands partly on level land, and partly on the slope of a hill. It contains about 3,000 houses, 2,000 of which form the Turkish town upon the level, and is enclosed within walls, the gates being regularly closed at sunset when all Christians are excluded; the streets are ill-paved and dirty. A mountain stream runs down the Greek quarter, over a bed of rock, and has a pretty effect. The population is about 12,000.

Consul.—A British Vice-Consul resides here.

Communication.—Steamers of the Pantaleon, Samian and Hagi Daoud Cos. call here twice a week from Smyrna, and Mersina, and the Austrian Lloyd's steamers fortnightly from Trieste. There is telegraphic connection with the rest of the civilised world.

Kus adasi or Bird islet, having a square tower on it, lies about one cable from the point near the south-west end of the town, with from one to 3 fathoms water, between.

LIGHT.—From a mast on a white house, situated at the north-west extreme of Kus Adasi, is exhibited at an elevation of 98 feet above the sea, a *white fixed* light, visible in clear weather from a distance of 8 miles.

Aspros Kavo, a remarkable projecting white cliff, about 8 cables north-eastward of Kus adasi, is surrounded by rocky ground which extends off 2 cables, with less than 6 feet water on its outer edge, and steep-to.

The anchorage is between Kus adasi and the shoal ground, off Aspros Kavo, in 15 to 16 fathoms, soft mud, and entirely open to the westward. It is exposed to all winds from the northward, round by west to south-west; between these points, during summer, the sea breezes invariably blow, often with considerable strength, and almost always sending in a heavy swell; and although the holding ground is good, it is not considered safe for large ships. Coasters obtain some shelter under the lee of Kus adasi. As the sea breezes alternate with the land winds, vessels under sail can leave the anchorage at night or early morning.

Lat. 38° 52' N.
Long. 27° 15' E.

DANGERS.—**Petroma reef.**—Yalanghi burnu is the name of the cliffy point, $3\frac{1}{2}$ cables south-westward from Kus adasi. Petroma reef, with less than 6 feet water on it in places, lies westward of this point, the outer part with a depth of $2\frac{1}{2}$ fathoms bearing W. $\frac{1}{4}$ N., distant nearly 6 cables from Yalanghi burnu.

Xerata Kargan adasi reef.—Kargan adasi is the name given to the islet $1\frac{3}{10}$ miles south-south-westward from Yalanghi burnu. This islet is close to a point, off which lies an extensive bank with from 7 to 13 feet water on it, and 6 fathoms between it and the shore. The outer extremity of Xera ta Kargan adasi reef, with depth of 13 feet, lies N.W. by W. $\frac{3}{4}$ W., three-quarters of a mile from the north point of Kargan adasi. There is a narrow passage, which may be taken by small coasters inside both reefs. As these dangers are steep-to, and the hand-lead of no use, this part of the coast should be given a wide berth.

Chart, 3,446,
1,546.
Var. 3° 50' W.

Coast.—Aslan burnu, a prominent point a mile to the southward of Kargan adasi, is backed by a hill, but from thence for a distance of 6 miles the coast which forms a bay is low, the hills retiring to a distance of from one to 2 miles from the shore. There is, however, an isolated hill with the ruins of a fort on it at 2 miles from Aslan burnu. At the end of the low land the coast turns to the westward as far as St. Nikolo point, being bold, rugged and steep-to, and thence to the southward for 2 miles to cape Kanapitza, maintaining generally the same character.

For continuation of the coast to the southward, see page 338 and previous pages.

Samsun dagh (ancient mount *Mykale*).—This elevated range of mountains extends east and west upwards of 15 miles, and rises suddenly from the low swampy land on the south, to its lofty summits 3,459 feet to 4,130 feet above the sea, and falls again on the north, where its base forms the southern shore of the gulf of Skala Nuova. Upon the rocky slopes towards the south-eastern termination of the mountain, are the ruins of Priene (now called Samsun), on a bold and precipitous rock; they consist of walls covering an extensive slope of the hill, out of which, as if built by art, spring perpendicularly the rocks on which the Acropolis was built. Priene is said to have been originally on the sea-shore. The elevated mass of the Samsun dagh terminates westward in Cape Kanapitza (ancient *Trogilium promontory*).

Panagia islet, situated $3\frac{1}{2}$ cables N. by W. from St. Nikolo point, is about 2 cables in extent, and separated from the mainland by a channel 2 cables wide, and 13 fathoms deep.

Chart, 1,530.

SAMOS.—This island, one of the principal of the Ægean sea, is nearly 25 miles in length east and west, and about $10\frac{1}{2}$ miles in extreme breadth. The approaches to the island are clear of off-lying dangers, the shores are generally steep-to, and there are no rocks or shoals which may not be avoided by ordinary attention.

Chart, 2,836a.

Aspect.—Samos is of a mountainous character, the two principal elevations being Mounts Kerki and Ampelos; the summit of the former at the west end being 4,725 feet above the sea, and the barren rocky peaks of white stone of which it is composed reflecting the rays of the sun, give the appearance of snow. This mountain is nearly entirely surrounded by precipices and is most difficult of approach. The ascent to Mount Kerki is varied and magnificent in the highest degree, the path at times winding through overhanging forests of oak and plane trees interspersed with firs and tangled underwood; at other times, running so close to the edge of the precipices as to raise doubts regarding the possibility of reaching the summit. As the summit is neared, the scenery becomes barren and desolate in appearance; the

Lat. 37° 44' N.
Long. 26° 30' E.
(Mount Kerki.)

Chart, 2,836a.
Lat. 37° 44' N.
Long. 26° 39' E.
(Mount Kerki.)
Var. 4° W.

only approach to the peak is by a narrow ridge of loose stones on the eastern side overlooking a ravine on either hand, nearly perpendicular, and where one false step would be fatal. Little or no vegetation appears on this sterile spot. The mountain forms three peaks about 250 yards apart; the western is about 6 feet higher than the others, the southern has a small chapel on it, and was formerly used as a look-out house. The view from the top is extensive and highly interesting.

Mount Ampelos of the eastern range, which rises near the middle of the island to the height of 3,730 feet, is round-topped, and easy of access; the sides are well clothed with forest trees.

The general appearance of the northern side of the island is beautiful in the extreme, being broken into unconnected hills and ranges, clothed in most places with luxuriant vegetation and large trees; in other places, rising to bare sterile peaks, splintered into numerous fantastic shapes forming a strong and picturesque contrast to the dark foliage which clothes the higher ridges of the mountains behind them.

Produce.—The villages are numerous and scattered over the island which contains an almost exclusively Greek population amounting in 1902 to 53,424. The produce consists of wine, oil, silk, valonia, cotton, corn, onions, and honey. Iron, copper, and lead are also to be found and marble abounds. Pitch and tar were formerly made in great quantities in the mountains, but the forests are fast falling before the axe. Near the village of Platano, on the ridge of Mount Kerki, a kind of white clay is found which is used as a substitute for soap; red ochre is also found, and many kinds of grapes are grown.

Trade.—The principal imports are grain, flour, alcohol, sulphur, iron, cotton, and woollen goods, wood and hides, and were valued in 1905 at 162,500*l*. The principal exports are wine, tobacco, olive oil, and locust beans, and in 1905 were valued at 165,000*l*.

Shipping.—In 1905, 1,200 steam-vessels of 349,667 tons, and 3,782 sailing vessels of 36,503 tons, entered the ports of Samos.

Climate, &c.—The air is remarkably salubrious, and many of the inhabitants live to a great age. Possessing the greatest natural advantages, and well stocked with oxen, sheep, poultry, game, fish, &c., and highly productive of every marketable commodity, this island should be the richest and best supplied in the Archipelago, but it is not so; the men are a fine race, but indolent and improvident, with a natural proneness to pleasure.

Numerous streams in the interior, contribute to the fertility of the soil. The River Mitelinous runs into the sea a little eastward of Port Tigani on the south-east side of the island, and the Imbrasus about 3½ miles westward of that port. Both are considerable streams in the winter, but in summer they are either dry or turned into different channels for the purpose of irrigation. Another and rather considerable stream rises at the foot of Mount Ampelos and after winding among the hills and turning many mills in its way, falls into Maratrokampo bay.

Antiquities.—Many remains of antiquity are to be met with, but the most considerable are at Port Tigani, where the ruins of walls and the sunken mole attest the former grandeur of the city. A theatre on the side of a hill is in tolerable preservation, and numerous fragments of columns and capitals are strewn about the small plain. On the north-east bank of the Imbrasus and near the sea, once stood the temple of Juno, one of the most superb and ancient temples in Greece. Its length appears to have been 576 feet with 24 columns on each face, and 12 at each end; only one now remains, without a capital, which lies shattered near its base.

Government.—Samos is under the Turkish Government, but ruled by a Phanariot Greek, with the title of Prince of Samos, and the people choose their own magistrates; they pay a tribute to the Porte, but are otherwise virtually independent. The former capital was Khora, about $2\frac{1}{4}$ miles north-westward of Tigani, an indifferent town or village with stony, steep, unpaved streets. The present capital is Vathi, to be again alluded to in connection with the port of that name.

Chart, 2,836a.
Var. 4' W.

SAMOS STRAIT.—The island of Samos is separated from the mainland by a strait about 9 cables wide at its narrowest part where the islet of Panagia, 2 cables in extent, is situated, and a 5-fathoms rocky shoal midway between the islet and Samos. With this exception, the strait is clear of danger at a prudent distance from the shore.

Chart, 1,530.
Lat. $37^{\circ} 42'$ N.
Long. $27^{\circ} 3'$ E.
(Panagia.)

Anchorage.—There is excellent anchorage in any convenient depth with northerly winds all along the south-eastern coast of Samos, from Karavotra the small rocky islet eastward of Cape Colonna, to Psili point, including Tigani and Misocampo bays; the best anchorage is perhaps in the latter, in 8 fathoms, sand and mud, near the centre of the bay. The River Mitelinous, a small stream, here runs into the sea, but it is turned off occasionally in the summer, for the purpose of irrigation.

Karavotra, the small rocky islet, $1\frac{3}{4}$ miles eastward of Cape Colonna, the south-western entrance point of the strait, is half a mile from the shore, which is bordered by shoal water; and S.W. by W. distant 3 cables from the central part of the islet, is a rocky shoal with less than 6 feet on it, and 17 fathoms close to.

Lat. $37^{\circ} 39'$ N.
Long. $26^{\circ} 55'$ E.

Port Tigani is on the south-east coast of Samos, and affords room for a limited number of vessels. A breakwater about 500 yards long extends over the site of an ancient mole from the western point of the entrance, having a number of stone bollards to which large steamers and other vessels secure their sterns, while taking in or discharging their cargoes. In the inner port situated in the north-west corner, quays have been constructed, and there is a depth of 10 to 13 feet.

Plan on 1,878.

In the outer port to which the breakwater affords some protection from southerly winds, there are depths of from 17 to 27 feet.

The port will be known by the conspicuous and picturesque monastery of Metamorphosa, standing over the coast on the western side. Much of the marble required to build it was taken from the old city; it was fortified but is now uninhabited, and fast falling to decay, like many other interesting remains on the island. (See view on chart, No. 1,530.)

Tigani is an indifferent village, having only a few good houses, with unpaved narrow stony streets, scarcely passable.

LIGHTS.—40 yards back from Glykora point, on the eastern side of entrance to Port Tigani, is a white house with a mast on it, from which at an elevation of 65 feet above the sea is shown a *fixed white* light, visible in clear weather from a distance of 10 miles.

A *white fixed* light is shown from a pole situated 20 yards from the end of the breakwater and marking the end of the ancient submerged mole.

Directions.—In proceeding through Samos strait, vessels may pass on either side of Panagia islet which is not high; but the northern passage is the wider and mostly preferred. Care must be taken to avoid the 5-fathoms rock in the middle of the northern channel.

Chart, 1,530.

Chart, 1,530.
Var. 4° W.

Lat. 37° 43' N.
Long. 27° 5' E.

Current.—The current generally runs to the eastward and sometimes as fast as 3 to 4 knots; but southward of the islet, at times, it sets westward and varies in direction. During northerly winds, the squalls in this strait are not so heavy as off the western end of Samos, and with the favourable current it is easy to work to windward.

Port Mollah Ibrahim.—In the small Port of Mollah Ibrahim, near the south-east end of Samos, the water is deep for anchoring, but the holding ground is good. The shore round the port abounds with wild liquorice. Grapodi point on the western side of entrance, should be given a berth of more than a cable; on this point and on Kukura point, on the other side of the strait, are the foundations of two circular buildings, which, from their positions, perhaps were formerly used as lighthouses.

Aspect.—The land over Mollah Ibrahim is 837 feet high, and when open eastward of Cape Prason the north-eastern point of Samos, forms two peaks appearing from the northward like a saddle. These hills rising close over the south-eastern extreme of Samos, with the Samsun dagh on the left, are conspicuous, and form excellent marks for entering the strait from the northward.

Cape Prason, the north-eastern extreme of Samos, is the termination of a high, rugged, bold, cliffy peninsula projecting $2\frac{1}{4}$ miles eastward from Mount Zodoki (1,228 feet high), called Dumuz burnu.

At about $1\frac{1}{2}$ cables eastward of the cape, is a rocky patch with 6 fathoms water on it. (See view of Cape Prason, and Samsun dagh on chart, No. 1,530.)

Dascalio point, 4 miles W.N.W. from Cape Prason, is a bold projecting point, surrounded by five small islets which are steep-to on their seaward sides.

PORT VATHI, on the north side of the eastern part of Samos, is the principal port in the island. It runs in between high wooded land $2\frac{1}{2}$ miles south-eastward, and from a mile in breadth at the entrance, narrows within to about half this distance, but widens again at its head. The water at the entrance is deep, but in the inner part of the port, there are from 6 to 20 fathoms. Although a heavy swell sets in with north-westerly winds (the usual summer wind), the anchorage is good, the holding ground excellent, and with common precautions, vessels never drive.

Ledge.—Monopetron point is situated on the south-west side of the port, and $1\frac{1}{4}$ miles from its head; close to the point, is a ledge awash.

LIGHTS.—200 yards back from the northern part of Kotzikas point, the north-east entrance point of Port Vathi, is a white house surmounted by a mast, from which, at a height of 131 feet above the sea, is exhibited a *white fixed* light, visible in clear weather from a distance of 12 miles. It is not seen inside the port when bearing northward of N.E. $\frac{1}{2}$ E.

A *red fixed* light is exhibited from a mast at the extremity of the breakwater extending from Kachuni point on the north-east side of, and about half a mile from, the head of the port; it is elevated 19 feet above the sea, and visible in clear weather from a distance of 4 miles.

Anchorage.—The best berth is on the south-western side, near a white house and garden, in 13 fathoms, mud, sheltered from the swell by Malagari point, the low sandy point to the north-westward, on which are situated some conspicuous wine-stores. Merchant vessels lie

Lat. 37° 45' N.
Long. 26° 59' E.

off the town, in from 10 to 3 fathoms water, mud. A good berth for a large ship, is in 7 or 7½ fathoms with a conspicuous peak between two windmills bearing S.E. by E., and the Health office open northward of the flagstaff. The water shoals rather suddenly from 7 to 5 fathoms, but more gradually from 5 to 2 fathoms. Chart, 1,530.
Var. 4° W.

Breakwater.—There is a breakwater 295 feet long at Kachuni point, and a mole at Malagari point.

Directions.—Bound for Port Vathi from the northward, bring Samsun dagh to bear about S.E. ½ E. and steer for it. Port Vathi will be known, by being the lowest land under the saddle between the two peaks of the mountain. (See view on chart, No. 1,530.) There is no danger lying far off the shores of the port, excepting a small rocky shoal with 2½ fathoms water on it, in the bight about halfway in, on the north-eastern side, but it is rather out of the way of vessels, unless beating in or out.

Caution.—The harbour is subject to heavy squalls from the hills.

The town of Vathi at the head of the port, is the present capital town, and largest in the island. Here are situated the palace of the Prince of Samos, and the Government buildings. It has a quay along the entire sea front, with a depth of 6 feet alongside, and a well-made zigzag carriage road connects the town to upper Vathi. The town is well built, clean, possesses free schools, and a free public hospital, and the sewage is being improved.

Supplies.—Small supplies may be obtained here, but no fuel.

Water.—Vathi has waterworks, but no means of supplying vessels except by open boats or casks.

Consul.—A British Consul resides here.

Communication.—There is telegraphic communication with Europe and the principal ports of Turkey, and telephonic communication with the principal villages in the island. There is frequent steamship communication with Marseilles, Trieste, Smyrna, Peiræus, Constantinople, Crete, the Syrian and Egyptian coasts, also with the neighbouring islands.

Karlovassi.—A harbour with 2 breakwaters has been constructed at Pankosi point, near Karlovassi, on the north coast of Samos, 12 miles to the westward of Port Vathi. The eastern breakwater runs N.N.W. for 300 yards. The western breakwater, starting 430 yards to the westward, runs N. by E. ½ E. 250 yards, and then E.N.E. 250 yards, leaving an entrance 130 yards wide. The general depth in the harbour is 16 feet and alongside the quay, between the breakwaters, 10 feet. Plan on 3,446.
Lat. 37° 48' N.
Long. 26° 42' E.

Light.—A red fixed light is shown at an elevation of 33 feet from an iron framework on the end of the west pier; it is visible in clear weather from a distance of 3 miles.

Communication.—Steamers of the Pantaleon Company call at Karlovassi harbour once a week from Smyrna and Rhodes; the town of Karlovassi about a mile distant is a telegraph station.

Port Zeitani, or Devil's harbour, is a small harbour formed by some rocks about 2½ miles to the south-westward of Karlovassi harbour, but is exposed and seldom used. Chart, 1,537.

Cape Katabasis, the western extreme of Samos, is bold and steep-to, the 100-fathoms line being only 2 cables distant.

Chart, 1,537.
Var. 4° W.

Cape Dominiko, the south-west point, is also bold and steep-to. This portion of the coast is very broken, but with no dangers outside its numerous small bays.

Maratrokampo bay.—Small vessels sometimes anchor in Maratrokampo bay, east of Cape Dominiko, but it is necessary to be close in-shore as the water is deep, and the shore bank is very steep. The best berth is in 4 or 5 fathoms, sand, and a third of a mile from the shore, with the houses on the beach in line with the village of Maratrokampo on the hill. The squalls from the mountains are very violent during northerly winds, and therefore the anchorage is not recommended; even in moderate northerly winds, the squalls sweeping down the hill side, are highly dangerous, and many small vessels are annually upset or dismantled in this vicinity.

Harbour.—A small harbour with a depth of about 13 feet has been constructed. It is formed by two breakwaters about 80 and 300 yards long respectively.

Water may be procured here from an aqueduct, which, however, is sometimes dry.

Samo pulo islet, off the eastern point of Maratrokampo bay, and $2\frac{1}{2}$ miles westward of Cape Colonna, is about a mile in length, and 4 cables from the shore; its northern and north-western points are foul, there being a rock with less than 6 feet water over it lying one cable north of the North point, and a rock awash, 3 cables N.W. by W. $\frac{1}{2}$ W. from the north entrance point of the little bay on the west side of the islet. Midway between the islet and Samos, there are from 20 to 25 fathoms water; the mainland within rises from the bold shore to a mountain called Prophetes Elias, 2,455 feet high.

Chart, 1,867.
Lat. 37° 32' N.
Long. 26° 5' E.

NIKARIA.—This island (ancient *Ikaria*) is about 22 miles in length E.N.E. and W.S.W., and from about 3 to nearly 5 miles in breadth. A chain of lofty mountains occupies its entire length, varying in height from 2,000 to 3,420 feet. The chief town consisting of a number of villages under the general name of Mesaria, is situated in the centre of the island and contains about 200 houses, near which there are some remains of antiquity as well as in other parts. The inhabitants, amounting in 1892, to 12,800, maintain themselves chiefly by the sale of charcoal and firewood gathered from the thickly-wooded hills, to the neighbouring islanders, and to the towns on the coast of Asia Minor. Like the neighbouring islanders, they pay an annual tribute to the Pasha of Rhodes.

Climate.—Nikaria has the character of being particularly healthy and conducive to longevity.

Productions.—Black raisins and fruits of all kinds grow luxuriantly here; the potatoes also are celebrated.

Communication.—Connection is maintained with Samos, and Skala Nuova, by caique.

Temporary anchorages.—There is no port in Nikaria, but on the north coast, Greek coasting vessels anchor under Kavo Agio Phokas, 3 miles westward of Cape Phanar; also in Kerame bay at about the centre of the north coast, with off-shore winds and under favourable circumstances, but this part of the coast should be quitted at the least indication of a northerly wind. Temporary anchorage may also be found in places along the southern coast of the island with off-shore winds, such as Agios Georgios half a mile off Cape Phanar;

Kriphoghialia or Angeriko bay, 6 miles south-west of the same cape; and at St. Nikolas bay 3 miles eastward from Cape Papas, but there is no shelter whatever from southerly winds. Chart, 1,867.
Var. 4° 10' W.

Cape Phanar and Beacon hill.—At about three-quarters of a mile south-westward of Cape Phanar, the eastern and somewhat flat extremity of the island, is a small elevation called Beacon hill; and 4 cables nearer the cape, is a ruined tower about 40 feet high. Southward of Beacon hill, is a curved sandy beach, off which a vessel will find shelter during a northerly or westerly gale. The shore northward of the beach is bordered by patches with 5 fathoms water on them, at a distance of about 2 cables, which should be given a fair berth in a large ship.

There are no off-lying dangers round the island, but sailing-vessels should be cautious when near the high land, and guard against squalls.

Nikaria passage between the island and Themina to the south-east, is $4\frac{3}{4}$ miles wide, clear and deep.

Cape Papas is the name given to the south-west extremity of Nikaria island and which falls steeply to the sea. The cape takes its name from a pope who formerly dwelt in the island. Lat. 37° 31' N.
Long. 26° 0' E.

LIGHT.—From a lighthouse on the extreme of Cape Papas, at an elevation of 213 feet above the sea, a *white flashing* light is exhibited, showing one flash *every minute* and visible in clear weather from a distance of 25 miles from the bearing of about S. 16° E. through east, to N. 77° W.

Chart No. 2,836a.

CHAPTER VII.

ISLAND OF CRETE OR CANDIA.

Charts, 2,536a.
Lat. 35° 30' N.
Long. 25° 0' E.

CRETE, CANDIA, or KIRIT, as it is variously named, is from its position, fertility, and population, the most important of all the islands of the Levant.

Crete is 140 miles in length, with a maximum breadth of 30 miles, and a minimum of about 7 miles. An irregular but continuous mountain chain extends east and west, from one extremity of the island to the other. The western portion forms the lofty ridge named Madara Vuna, or the White mountains, which attain an elevation of 8,100 feet. Mount Psiloriti or Ida, situated near the centre of the island, terminates in three lofty peaks, of which the highest is 8,060 feet above the sea.

The rivers are very numerous, but the majority are mere mountain torrents, dry in summer; even the largest become straggling streams and stagnant pools at that season, and should be carefully avoided, as they are centres of malaria.

By the census of 1900, the population consisted of 269,319 Greeks, 33,496 Mohammedans, and 728 Jews; besides 6,113 foreigners, of whom 3,977 were Greeks, 1,075 Turkish subjects, 555 Italians, 141 British subjects, and 136 French subjects.

The population of the island is for the most part employed in agricultural pursuits, in wine making, in the manufacture of olive oil, soap, dyeing operations, and, to a small extent, in carpet weaving.

The rural population is mainly Christian; but in some districts there is a large intermixture of Mohammedans, chiefly in the more fertile parts of the low districts and valleys near the principal towns. These Mohammedans are, for the most part, native Cretans, and their dress is so similar to that worn by the Christians as to render it difficult for a stranger, although he may be a Greek from the neighbouring islands, to distinguish Mohammedan from Christian. The Cretans are very hospitable to strangers, and, as a rule, exceedingly bright-witted, intelligent, and industrious; clever as artisans, brave, and honest. Greek is the common language of both Christians and Mohammedans, the higher class of Mohammedans speaking Turkish also.

Government.—In December, 1898, Crete was given an autonomous government, under the Suzerainty of Turkey, but without tribute, and a High Commissioner appointed by the European powers.

Climate.—Crete from its position, being intermediate between the hot and arid air of Africa, and the more humid atmosphere of south-eastern Europe, is favoured with a more genial climate than either. Its summer temperature averages about 80° Fahr. between the months of May and November, in the low districts near the shore, and the winters are so tempered by the surrounding sea, and its proximity to Africa, that the thermometer seldom stands below 45° at the coast towns. Having several lofty mountains, with upland plains and secluded vales on their flanks, a milder temperature exists in them than in the open country and low lands bordering the coast, depending in intensity upon their zone of elevation and aspect to which they are exposed.

Snow is present during winter at all summits above 6,500 feet, but it all disappears by the end of July. The climate is one of the healthiest in the Ægean sea, and very similar to that of northern Sicily. Even the summer heat, though often great, is not unhealthy. This generally prevails from the middle of June to the middle of September. At other times, extremes of heat and cold are rare, and never of long duration. The average annual rainfall is 25 inches. (See Meteorological Table, Appendix, page 343, for result of observations extending over several years at Khania.)

Charts, 2,536 a, b
Lat. 35° 30' N.
Long. 25° 0' E.

The best season for travelling in Crete, is from the beginning of April to the middle of June. September and October are delightful months when fine, but heavy rains are common at that season, often rendering the rivers impassable.

Products.—The fruits of middle and southern Europe may be grown in some of the upland regions, as may also some of the north African produce and fruits upon the lowlands, for the orange, grape, and olive flourish in the north and internal parts of the island better than in any other part of Greece or Asia Minor. Apples, pears, and potatoes are the produce of some of the upland districts and plains, whilst wheat of a remarkably white and good quality is grown in the low valleys on the south coast. The land is stocked with game, and the sea with fine fish; but the chief wealth of the country at present lies in its olive crops. Former revolutions and disturbances, arising from various causes in connection with political and religious animosities, tended to create a feeling of insecurity, so that notwithstanding its genial clime and fruitful soil, its prosperity and population have but slowly advanced.

Red-legged partridges, woodcock, and hares, are found in all parts of Crete, and afford excellent sport to those who take the precaution to bring good dogs with them, for there are none in the island. There are also in some parts, a few quail, mallard, teal, wood pigeon, and a species of thrush, but no large game, except a small number of wild goats occasionally met with in the mountains; the Cretans say that their island is free from wolves, foxes, jackals, snakes, and all noxious and venomous animals.

Trade.—The principal exports are olives, olive oil, and other agricultural produce, soap, drugs, wine, and live stock, and were valued in 1905 at 448,976*l*. The imports are grain, cotton and woollen goods, hides, &c., and were valued in 1905 at 607,400*l*.

COMMUNICATION.—Steamers.—The principal ports of the island are in weekly communication with Turkey, Egypt, Greece, and other parts of Europe, by the following steamship companies, viz. :

—The Austrian Lloyd's, Messageries Maritimes, Florio-Rubattino, Russian, Goudi, Compagnie de l'Orient, and Pantaleon. There are also fortnightly steamers belonging to the Mahsuse Co. of Constantinople, one running to and from Alexandria, and another touching here from Constantinople to the coast of Barbary and back.

Telegraph.—The chief towns are connected with each other by telegraph lines, and with the outer world by the Eastern Telegraph Company's cables.

QUARANTINE REGULATIONS.—The chief Health office is fixed at Khania, and there are subordinate offices established at Suda, Rhithymno or Retimo, Megalo Kastron, Spinalonga, Port Nikolo, and Sitia, also subordinate offices for local trade only, at Hierápetra, and Sphakia

Charts, 2,536 a, b.
Lat. 35° 30' N.
Long. 25° 0' E.
Var. 5° W.

Immediately on arrival at a port, the captain of a ship, whether a war or merchant vessel, must report himself at the Health office, and no communication with the shore must take place until he has received pratique. Vessels are not allowed to perform quarantine in any port of the island, but must proceed to Vourlah road in the Gulf of Smyrna, or Beirut, for that purpose.

Every ship leaving the island, and bound to a Turkish port, must be provided with a bill of health procured from the Health office, for which a fee, varying from two to twenty piastres, is charged. A foreigner, to obtain this document, must also bring the passengers' passports a certificate from his Consul, as well as one from the Custom-house. When a ship leaves the port without having unloaded her cargo, it is not necessary to take a new bill of health, but to obtain a "visa."

PONDIKŌ-NISI.—The outlying islet of Pondiko-nisi or Rat islet, and its little rock, close off its south-western extreme, are about 6½ miles S. 70° W. from Cape Busa. The islet is half a mile long, 730 feet above the level of the sea, steep-to, and has no anchorage; it is the ancient *Mylæ*.

Plan on 217.
Lat. 35° 37' N.
Long. 23° 35' E.

CAPE BUSA, the north-west extremity of Crete, is a high and precipitous promontory stretching northward towards the island of Antikithera. It is 7 miles in length by about one mile in average breadth, its highest part, the ancient Mount Korykos, reaching 2,560 feet above the level of the sea; two other summits attain respectively 2,430 feet and 807 feet.

Agria Grabusa is a bold and barren island lying northward of Cape Busa. The island is $1\frac{2}{10}$ miles long in a north-west and south-east direction, by a quarter of a mile in average width. The passage between Agria Grabusa, and Cape Busa, is 4 cables wide, but the navigable channel is reduced to less than half this breadth, by a reef extending $1\frac{3}{4}$ cables from the south-east end of Agria Grabusa, and a 3-fathoms shoal from Cape Busa.

Grabusa islet, about 7 cables in diameter, and 450 feet high, is precipitous, and surmounted by a fortress built by the Venetians, to prevent its becoming the stronghold of pirates at the threshold of the Cretan seas, when Crete was in possession of Venice. The island is situated one mile south-westward of Cape Busa, with deep water between; the fortress renders the island very conspicuous from the westward.

Grabusa attained some celebrity in the war of Greek independence (1823), in which the Cretan Greeks took a long and energetic part against the Turks; the island was taken from the Turks by a surprise over its garrison of three, who then held charge of the stronghold. It was subsequently retained by Greek and Cretan pirates, until 1828, when it was destroyed by a combined English and French squadron. It was during this last attack on the 31st of January 1828, that H.M.S. *Cambrian*, by an accident in missing stays, was wrecked upon the reef south of the islet.

Grabusa harbour is formed between a small peninsula called Tigani (Frying pan), lying southward of Grabusa, and a long ledge of rocks partly awash, extending southwards from the south-western end of Grabusa like an artificial mole, but with a passage 4 cables wide and from 7 to 10 fathoms deep between its extremity and the rocks extending from Tigani peninsula. The bottom of the harbour is composed of a thin layer of sand over rock, and therefore affords no secure hold nor safe shelter during violent gales from the westward; it is therefore not

recommended as an anchorage in south-westerly gales. The best shelter is with the eastern point of Grabusa islet in line with the centre of Agria Grabusa, and between the former and a black rock, lying 2 cables from the eastern side of the harbour. Plan on 217
Var. 5° W.

Directions.—The safest channel into Grabusa harbour, is the northern, taking care, however, to give the eastern point of the islet a berth of 2 cables, to clear the shoal extending from it to the eastward and southward. In a northerly gale during winter, it might be more convenient for a vessel caught near this entrance of the Archipelago to run for this harbour, so as to be ready to take advantage of any change of wind or weather, in preference to lying-to, and being drifted to leeward of Crete.

KISAMO BAY.—The entrance to Kisamo bay is formed between Agria Grabusa and Cape Spada, which bears from the north-west end of the former, E. by N. $\frac{1}{4}$ N., distant $8\frac{1}{2}$ miles. The bay from the line joining these two extremes runs in $10\frac{1}{2}$ miles, and at its head is a narrow marshy plain with a sandy shore, behind which rise gentle ridges, well cultivated with corn, vines, and olives, and containing several villages.

Chart, 2,536a.
Lat. $35^{\circ} 39' N.$
Long. $23^{\circ} 39' E.$

A dilapidated Venetian fortress stands at the head of the bay, upon the site of the ancient town of Kisamo, and just over an old sea cliff; adjacent is a poor village and bazaar. The ancient mole which formed the old port of Kisamo is now visible to a height of nearly 20 feet above the sea, owing to a subsequent elevation of the coast; the harbour is consequently almost dry and choked with sand. A ledge of low sea-washed rocks, two-thirds of a mile north-west of it, juts out to a point called Kavó nisi, and divides the head of the bay of Kisamo from the valley and bay of Masogia. The water shoals nearly half a mile northward of Kavó nisi.

Directions.—Being quite open to the northward, the bays of Kisamo and Masogia are not recommended as anchorages for sailing-vessels, the bottom being generally sandy and the holding ground bad. Should a vessel, however, be unfortunately embayed and hampered between the promontories of Grabusa and Spada during a gale from the northward, she should run towards the south-eastern angle of the bay and anchor in not less than 17 fathoms water, off Tranisa point, where the bottom is muddy and more tenacious than elsewhere. A well-found vessel, with the usual precautions of sufficient cable out, would here ride out an ordinary gale with safety.

Agios Sostis bay.—Native coasting craft find shelter in a small indentation of the shore on the western side of Kisamo bay, about $2\frac{1}{2}$ miles southward of Cape Busa, called Agios Sostis, from a chapel existing there dedicated to this Greek saint; the water is, however, too deep for anchoring off it, and to obtain shelter, it is necessary to have the stern secured to the northern shore. Plan on 217.

Water may be obtained at the mouths of all the valleys, and a small supply of provisions from the adjacent villages.

CAPE SPADA (ancient *Psakum* prom.), the most northerly extreme of Crete, is easily recognised by a small conical hillock like a tumulus, which stands over its high and bluff extremity, the summit of which is 1,200 feet above the sea.

Lat. $35^{\circ} 41' N.$
Long. $23^{\circ} 44' E.$

This remarkable promontory, projecting northward 11 miles beyond the usual line of the coast, has an average breadth of 3 miles. The

Chart. 2,536a.
Var. 5° W.

land is generally about 1,800 feet high, but the ancient *Tityrus* mountain rises near the centre of the promontory to a height of 2,500 feet above the sea. The shape of this tongue of land is not unlike the blade of the sword; hence probably the name Cape Spada.

Long. 35° 41' N.
Lat. 23° 44' E.

LIGHT.—It is proposed shortly to establish on Cape Spada a *fixed* and *flashing* light *every five seconds*, visible in clear weather from a distance of 25 miles.

Cove.—On the eastern side of Cape Spada, is a cove at the mouth of rocky glen, called Kantzilières, where coasting craft sometimes get shelter by securing under its northern cliff. The ruins of the ancient town of *Dictamnnum* lie at the mouth of the gorge or glen, and it was celebrated for its temple to the heathen goddess Britomart, under the name of Dictynna.

KHANIA BAY is formed between the peninsula of Cape Spada and the bold and broad peninsula of Akrotiri, the northern termination of which is cape Tripiti, bearing nearly E.S.E., distant 20 miles from cape Spada. The bay recedes from this line, 6½ miles on the eastern, and 8½ miles on the western side, and the town of Khania, on the low shore near its south-east angle, may be distinguished at a distance of 9 or 10 miles.

To the southward of the town of Khania, rise the lofty mountains of the Madara Vuna, the ancient *Leuce* or White mountains, so called no doubt from their bare, bold, whitish summits, or from retaining snow on some of their peaks during a great part of the year. The Madara Vuna are a broad mass of naked crests showing a serrated outline, without any remarkable feature or peak as a defined summit (*see* page 246).

The Malaxa and Therison ridges, are spurs extending from the Madara Vuna to the northward, and at the base of these spurs lies the bay of Suda, with the fertile plain of Khania extending westward from it, luxuriant with fine olive groves, and studded with thriving villages. The Madara mountains are visible from the south coast of Greece; Agio Pnevma, 7,650 feet high, although not the highest, is one of the most eastern and easily recognised peaks, from its somewhat conical form.

Theodoro islet.—**Anchorage.**—Theodoro is a barren islet, 540 feet high, lying 4 miles westward of Khania, and half a mile from the shore. The shelter it affords is very limited, where the holding ground is good, but it only requires confidence in the management of the vessel to ensure taking a berth close to the north-eastern point of the islet, and thus to anchor where shelter will best be obtained. To do this, the starboard anchor should be let go in 9 or 10 fathoms water, at about half a cable off the north-eastern extreme of the islet, when bearing about N. by E. ¾ E., and the other anchor about W.S.W. of it, about the same or even a less distance from the shore, in 5 or 6 fathoms, when the point bears about N.E. by E. A chain may also be taken to the rocks, if practicable.

The bottom here is a stiff muddy sand, and good holding ground, and the shore is so bold as to have 4 fathoms close alongside it. The ground off the southern portion of the islet is loose sand; the channel between the islet and Crete is shallow, and obstructed by rocky patches. The only safe anchorage is consequently that close under the north-eastern extreme of the islet, both in respect to depth of water and nature of bottom.

The Venetians had a fortress on Theodoro, to protect their larger trading ships whilst waiting their cargoes from Khania, and other

ports. They used to anchor here in safety, with shore-fasts to the islet as recommended. Chart, 2,536a.
Var. 5° W.

KHANIA (CANEAE), the ancient *Kydonia*, the capital of Crete, is regularly built, but with narrow streets; a rampart runs round the town, but is in rather a dilapidated condition. It is the residence of the High Commissioner. The European Consuls also reside here, in consequence of its proximity to the fine bay of Suda, and from its having a small port convenient for vessels of light draught. It is the principal trading place in the island, and its population in 1900 was 24,537. Plan on 1,658.
Lat. 35° 31' N.
Long. 24° 2' E.

The greatest tolerance exists in all religious matters. Besides eleven mosques, there are two Greek churches, two Jewish synagogues, and a Roman Catholic church. Each faith is well provided with schools, to the maintenance of which the local government contributes liberally. Of the three Greek schools in Khania, one is a primary school, another a girls' school, and, finally, an upper school or lycée. The Mohammedans have a primary school, and three lycées, also an excellent girls' school.

The water supply of Khania is obtained from a spring at Butzunaria, about 5 miles distant, from which it is brought by pipes.

The country around Khania is not only fertile, but exceedingly well cultivated. The only product exported to Europe is oil, of two qualities, chiefly shipped to France and Austria. Part is used locally for making soap, of which there are many factories in Khania, and Megalo Kastron or Candia.

Communication.—Khania is in telegraphic communication with the principal towns of the island; also with Rhodes, Alexandria, and Syria. A cable is also laid to Zante, and thus messages may be sent to all parts of the world.

The Austrian Lloyd's steamers call here weekly, from Trieste, Peiræus, Smyrna, Constantinople, &c.; the Messageries Maritimes steamers from Marseilles monthly; the Russian Companies steamers run weekly to Peiræus. The Florio-Rubattino Company's steamers call weekly on their passage from Genoa to Odessa, and bi-weekly from Syracuse and Malta.

The British Consul General for the island, has his official residence at Khania.

Trade.—Oil, soap, wine, and oranges are largely exported to all the Levantine ports, especially Egypt. Almonds, cheese, and carobs or locust beans are also exported, though in smaller quantities. To these may be added in winter, the export of Cretan snails. Silk gauze (similar to that of Brusa) lace, and coloured woollen and cotton goods, are largely produced throughout the island, but not exported. Many potteries exist, but the wares are for home use only. Among eatables, the delicious cream cheese ("Cheese of flowers," as the Greeks call it) deserves notice, and among textile fabrics the pretty-patterned, many-coloured cotton yorghans—a speciality of the Sphakia mountains.

Shipping.—During 1906, 689 steam vessels of 659,812 tons, and 72 sailing vessels of 7,631 tons, entered the ports of Khania and Suda bay; of these, 3 steam vessels of 663 tons, and one sailing vessel of 123 tons were British.

Telegraph cables.—Three cables are landed near the ruins of an old convent, close east of the fortifications. One cable is laid to Zante, a second to Rhithymno, and the other to Megalo Kastron. They leave the shore in a north-easterly direction. (*See next page.*)

Plan on 1,658.
Lat. 35° 31' N.
Long. 24° 2' E.
Var. 5° W.

Hospitals.—Khania has civil, military, and naval hospitals, as well as an asylum for the insane. The climate is so healthy, that the demands on all four institutions are happily slight. There are also in Khania public baths and clubs. Water is abundant and good.

Khania harbour is formed partly by a ledge of rocks, which lies parallel with the coast, and partly by an ancient mole, built upon and extending from them, and upon which is raised a high sea-wall or parapet, with a fort in its centre. This mole extends from the north-eastern bastion of the town wall, thence towards the north-western bastion, leaving a channel half a cable wide, and 30 feet deep, between the latter and a lighthouse at the extremity of the mole; but inside, the depths quickly shoal to the shore.

Within, the harbour is in the form of a double bay; the southern one lies directly opposite the entrance, where the water is deepest, but much exposed with northerly gales to an inconvenient and dangerous swell; only vessels under 10 feet draught can be sheltered behind the mole. Around the southern bay is the marina, on which the Custom-house and principal merchants' storehouses are situated; vessels with cargo consequently anchor here for convenience of trade, and the greater depth of water. The eastern bay is long and narrow, and contained the arsenal of the Venetians; thirteen of the original galley arches still remain, but the water in this part of the port is now so shallow, that only vessels in ballast or of light draught, and coasting craft, can use it. (*See view of Khania, on chart, No. 2,536a.*)

Caution.—It is impracticable to enter this harbour with a strong northerly breeze, and it is never prudent for a stranger to do so unless piloted by the Captain of the Port, who attends outside to conduct vessels to their berth, when it is safe to do so.

LIGHT.—On the mole head, on the eastern side of the entrance to the harbour, is a white lighthouse 75 feet high, from which a *white fixed* light is exhibited at an elevation of 82 feet above the sea, visible from a distance of 12 miles in clear weather.

Chart, 1,658a.

Anchorage.—Steamers and even sailing-vessels may often find it more convenient to communicate with the officials at Khania, from the roadstead, than by proceeding to Suda, especially in the summer, or with any south-westerly wind. The best holding ground is in depths over 20 fathoms; sailing-ships should therefore not anchor in less than this depth. Steam-vessels anchoring nearer the harbour should avoid a rocky patch of 17 to 18 fathoms, 1½ cables in diameter, from the centre of which, the lighthouse bears S. 5° E. distant 6 cables. It is not safe for a sailing-vessel to remain with a rapidly rising barometer, during or immediately after a S.W. gale, or with a threatening gale from the northward; under these circumstances, the shelter of Suda bay should be obtained.

To avoid injuring the telegraph cables laid on the east side of Khania bay, vessels should not anchor with the north-east angle of the bastions bearing westward of S. 10° W.

In case a vessel should have remained too long, or be caught after leaving the port, and cannot then re-enter or beat out of the bay against the head swell, she should then run for Theodoro islet, and endeavour to bring up close under its north-eastern extreme. (*See page 220.*)

Chart, 2,536a.

AKROTIRI, almost an island, about 6½ miles in diameter, separates Khania bay from that of Suda. This peninsula, the ancient *Kyamon* promontory, is joined to the main by an isthmus only 1½ miles

across. Cape Mavro Muri, its north-western extreme, is low, and from the shore one mile north-east of it, a ledge of rocks and foul ground extends half a mile northward, which must be avoided in rounding the promontory to, or from Khania. In strong northerly winds, a wide berth must be especially given to this part of the coast, in consequence of the uncertain set of the currents and heavy swell.

Chart, 2,536a.
Var. 4° 50' W.

The land beyond Cape Mavro Muri is bold and high; Capes Tripiti and Maleka form bluff headlands, and $2\frac{1}{2}$ miles south of the latter cape, and a mile from the eastern coast, is the highest peak, a conical summit named Mount Viglia, reaching an elevation of 1,745 feet above the sea. (See view of the island of Crete, from north-eastward of Cape Maleka, on chart No. 2,536a.) With the exception of the foul ground north of Cape Mavro Muri, the peninsula is steep to on all sides, and has an elevated plateau in its centre, round which are several villages.

Manati islet, or Paleo Suda.—From Cape Maleka, the eastern bold coast of Akrotiri trends south-south-eastward $3\frac{1}{2}$ miles and then south-south-westward $2\frac{1}{2}$ miles to Manati islet, which is less than 2 cables from the coast, with a narrow 3-fathoms channel between. There is anchorage south-west of Manati islet, in from 12 to 17 fathoms water, on a bottom of muddy sand, convenient for waiting until daylight, or remaining even during a gale, if no supplies are required or communication desired with Khania. It is invariably found that the wind lessens in force as the entrance to Suda bay is neared. The mass of mountains forming the Madara Vuna or White mountains, lying so immediately over the gulf, acts apparently as an obstruction to the wind, and prevents its full force fetching home upon the coast beneath it.

Chart, 1,658.
Lat. 35° 30' N.
Long. 24° 12' E.

SUDA BAY, the entrance points to which may be said to be Manati islet and Cape Drepano, is one of the safest and most capacious ports in the Levant. It is most conveniently situated for vessels just entering the Archipelago, and seeking shelter from a rising northerly gale in the winter, at which time it is most frequented by wind-bound vessels of all nations.

Suda islet.—The islet of Suda is $1\frac{1}{4}$ miles south-westward from Manati islet, and separated from the shore of the promontory by a channel $2\frac{1}{4}$ cables in width, but which is further contracted by a shoal nearly a cable in diameter, with a rock on it, nearly in the middle of the fairway. The islet is surrounded by white cliffs, but they are not seen until a vessel is within a mile or two of the entrance. The fort on the islet is a complete ruin. To pass between Suda islet and the shoal, a small vessel should keep the ruined though conspicuous red tower at the head of the bay in line with a peaked hill at the back of it, bearing N. 83° W.; H.M.S. *Fearless* passed through on this mark in 1892, with not less than $7\frac{1}{2}$ fathoms.

Lat. 35° 28' N.
Long. 24° 9' E.

LIGHT.—On the south part of the fortress, a *white fixed* light is shown from a height of 82 feet above the sea, and is visible in clear weather from a distance of 10 miles.

CAPE DREPANO is a bold point of land, with a high and flat table summit, and a rocky tongue like a reaphook forming its extremity, from whence its name is derived. The table hill, 1,830 feet high, over Cape Drepano, is a good landmark for distinguishing the entrance to Suda bay, whilst the northern side is distinguished by the sharp conical peak of Mount Viglia.

Chart, 1,658.
Var. 4° 50' W.

LIGHT.—At 328 yards within the extremity of Cape Drepano is a white tower, from which is exhibited at 197 feet above the sea, a *white fixed* light varied by a *flash every minute*, which should be seen from a distance of 17 miles in clear weather.

Kalivia bay.—The south shore of Suda bay, trends in a south-west by west direction $2\frac{1}{2}$ miles, and then north-west by west about the same distance to Suda point. The western portion to this bight is called Kalivia bay, from the shore of which, a shallow bank extends from 2 to 3 cables.

Suda point, surmounted by Paleo kastron, the ancient *Aptera*, is situated $8\frac{1}{2}$ cables southward from Suda islet. An ancient mole with 6 to 10 feet of water over it, extends $1\frac{1}{2}$ cables northward from Suda point. From Suda point, the south shore of the bay trends westward $1\frac{1}{2}$ miles, and then west-north-west nearly 2 miles, to the dockyard. A depth of 10 fathoms will be found at a cable from this shore.

Lat. 35° 29' N.
Long. 24° 9' E.

North-westward, half a mile from Suda islet, on the Akrotiri coast, is a small natural port (the ancient *Minoa*), now only accessible to boats, as a ridge of shingle bars its entrance.

Plan, 3,691.

From Suda islet, the north shore of the bay extends west-north-west $4\frac{1}{2}$ miles to the head. The north, like the south shore, is fairly steep to for $2\frac{2}{3}$ miles, or half a mile westward of Spartea cove, whence a line to the western side of the dockyard marks approximately the 10-fathoms line. After passing westward of Suda islet and point, the water deepens to 123 fathoms, and depths too great for anchorage continue until within $1\frac{1}{2}$ miles of the head of the bay, where there is a depth of 20 fathoms.

Suda bay is enclosed between steep sterile hills, the rich plain of Khania extending beyond it to the westward, with its luxuriant groves of olives. The road to Khania by the plain from Azizieh, is about $2\frac{1}{2}$ miles in length upon a paved road, and a traction engine with an omnibus attached, runs frequently.

Chart, 1,658.

Directions.—In making for Suda bay from the northward, the peninsula of Akrotiri is remarkable, and the cone-like shape of Mount Viglia cannot be mistaken. Cape Drepano lighthouse is not easily distinguished, but the high flat land at its back shows out well. Manati island is low, and will not be seen until well in; round it at any convenient distance, and then steer with the southern end of Suda islet a little on the starboard bow.

Pass about a third of a mile southward of Suda islet, or midway between it and Suda point, then steer about W. by N. $\frac{3}{4}$ N. for the anchorage abreast the dockyard. As the head of the bay is surrounded by shoal water, and the bottom in places uneven, attention should be given to the lead, and a large ship should not go into less than 8 fathoms water, nor bring the minaret in the dockyard to bear southward of S. $\frac{3}{4}$ W.

Plan, 3,691.
Lat. 35° 29' N.
Long. 24° 5' E.

Anchorage.—The best anchorage in Suda bay is off the dockyard, in from 13 to 16 fathoms, and nearer the southern shore than the northern. On the north side the bottom is very soft mud, which affords but little hold for the anchors. Northerly winds are not dangerous in this bay, but southerly winds blow in gusts and sometimes intercept communication with the shore, more especially from January to March, when southerly gales are frequent.

The dockyard is easily recognised by the high wall surrounding it, and by the sheds, factory, building slip, and minaret. The red tower at the head of the bay, although in ruins, is readily made out, and the village of Azizieh by its buildings and minaret. The white mosque

at the village of Chakalaria, a mile southward of the head of the bay, Chart, 1,658.
Var. 4° 45' W.
is also conspicuous.

Winds and weather.—January, February, and March are the bad weather months; during this season there are frequent gales and much rain. During the summer months, an occasional gale, generally from the westward, may occur, but as a rule the winds in Suda bay are local; light airs from the westward are experienced in the mornings and forenoons, and winds from seaward in the afternoon, falling to a calm a little after sunset. During north-west or northerly winds outside, it will generally be from west or west-north-west in the bay, caused by the valley at its head, and the hills on either side. The south-east and southerly winds, as at Malta, are hot and oppressive, and the bay being enclosed with high land, except at the entrance, the hot winds from off it are felt from every quarter. The weather in summer is generally fine and clear, but the heat is oppressive; and owing to the close proximity of a few marshes, fever and ague, generally in a mild form, prevail at this season.

Bills of health.—These can be obtained from the Custom-house at Suda village, and time will be saved by a medical officer attending there early with the necessary papers, as the authorities do not visit vessels on their arrival, though the health regulations are rigidly exacted. For Quarantine Regulations, *see* page 217.

The dockyard on the southern side, and about three-quarters of a mile from the head of Suda bay, is a small government establishment containing one building-slip for a vessel of about 2,000 tons, several workshops, saw-mill, factory for repairing engines, a crane to lift 8 tons and large steam-hammer; adjoining the yard, are coal depôts for the navy. The whole yard was reported to be deserted in 1905, the crane only being in use.

Azizieh.—At nearly three-quarters of a mile westward of the dockyard, is the new village of Azizieh, called after a late Sultan. It stands on the site formerly called Tuzla, from its salt pans; the land in its vicinity has been drained, and the place converted from a plague spot into a neat, well-to-do village with stone houses.

The number of persons in Azizieh does not exceed 1,000.

Telegraphic communication.—A land line belonging to the Eastern Telegraph Co., connects Suda with Khania, and thus with all parts of Crete and the rest of the civilised world; the telegraph office is inside the dockyard.

Supplies.—Fresh meat and vegetables may be obtained, and other provisions are plentiful and cheap. The water is too deep, and the small bays not sandy enough for the seine, but a few salmon bass of a large size may occasionally be caught.

Coal.—About 2,500 tons of coal are usually in stock; it is brought off in lighters of from 10 to 20 tons.

Water.—At the village of Kalivia, in the bay of that name already alluded to, there are fertile hills and valleys, with copious rivulets of limpid water falling through them from the Apokorona district. One of these streams is deep, and navigable for a short distance, and the water is excellent; but the others are brackish near the sea. The best summer watering place for a fleet, or for a vessel when not required to go to the head of Suda bay, is from the fountain at the foot of the hill of Paleokastron, about half a mile westward of Suda point. The water

Chart, 1,658.
Var. 4° 50' W.

is of excellent quality, and the boat being able to get close in to the beach, can be filled at the rate of about 4 tons an hour. There is a stone pier or jetty about 200 feet in length, a little eastward of the fountain, constructed for landing troops. The ruins of the ancient city of *Aptera* lie over the spring. There is summer anchorage for large vessels in 16 fathoms of water, on the bank south-eastward of Suda islet, and convenient to this watering place, but occasionally there is a heavy swell from the north-eastward.

A tank-vessel of about 10 or 12 tons, is attached to the dockyard, and the water supplied is very good. Steam-cutters can water alongside the dockyard jetty on getting permission from the authorities, but must take care not to get aground. At the head of the small river northward of Azizieh, is an excellent spring of water, but during the summer months the bed of the river is dry a little within its mouth.

Chart, 2,536a.
Var. 4° 45' W.

The coast from Cape Drepano, forming the west side of Armyro bay, trends nearly south for a distance of 7 miles to the mouth of the Armyro river, at the south-western corner of the bay of the same name. This coast is nearly straight, cliffy and steep-to.

Lat. 35° 21' N.
Long. 24° 15' E.

Armyro is a ruined fort, about a mile within the south-west angle of the bay, where numerous sources of clear but brackish water, issue and unite with a fresh water rivulet flowing out of the gorge or pass in the western mountains, that separates the Apokorona valley from the Armyro plains. Thus united, these waters form a small stream debouching on the shore. On the south side of the mouth of this stream, stands a well-built though small village of white houses, which can be seen from a distance of 10 or 12 miles. Close to its mouth is Nikola islet, 8 feet high, on which stands a very conspicuous white stone house.

The river has at present a bar of rock and sand across its mouth, over which there is not more than 3 feet, but in ancient times it formed a winter harbour for vessels, when, probably, its entrance was deeper, as the adjacent cliffs show a rise of the coast of about 6 feet in historic times; and the same evidence exists in the bays of Suda and Khania, but to a greater extent.

Plan on 217.

RHITHYMNO or RETIMO, the third town in size in Crete, and the capital of the central district of the island, lies 13 miles, about S.E. by E. from Cape Drepano, and extends over a rocky projection of the shore; it is surrounded by fortifications, with a citadel at its north end, both being the work of Venetians.

A small harbour opens to the south-eastward between two short moles, but at its best it only admits vessels of a less draught than 4 feet, and was reported in 1908 to be almost impassable even for lighters. The entrance of the harbour is badly situated, being in a direction to receive the littoral drift from the sandy shore eastward of it; and thus dredging, which periodically takes place, has no permanent effect in maintaining the depth at the entrance.

Trade.—The chief exports are oil, soap, wine, silk, locust beans and valonia, the value of which, in 1905, amounted to 65,040*l*; the imports are potash, cereals, manufactured goods, hardware, timber and salt fish, valued at 65,544*l*.

Shipping.—In 1906 402 steam vessels of 258,030 tons, and 13 sailing vessels of 2,839 tons entered the port of Rhithymno, of which none were British.

Population.—The population in 1900 amounted to 9,311 persons.

Communication.—Austrian Lloyd's steamers call here fortnightly connecting with Trieste, Peiræus, and Constantinople; other

steamers run to the other towns in the island, and also to Greece, Alexandria, and Turkey. A land telegraph line connects Rhithymno with the principal towns of the island, and a submarine cable is laid to Megalo Kastron, where communication may be had with all parts of the world. A cable is also laid to Khania.

Telegraph cables.—The above-mentioned cables are landed at a cablehouse situated near Gube spring, about two-thirds of a mile westward of the town. The cable to Khania leaves the shore in a north-westerly, and the other in a northerly direction; vessels must avoid anchoring over them.

Supplies.—Fresh meat, bread, vegetables, and fruit can be obtained in small quantities.

Consul.—A British Vice-Consul resides here.

LIGHT.—From a white tower 27 yards from the southern extremity of the mole on the north-eastern side of the entrance to the harbour of Rhithymno, a *white fixed* light is exhibited at an elevation of 49 feet above the level of the sea, visible from a distance of 12 miles in clear weather.

The anchorage is north-eastward of the town, on a bottom of muddy sand, in about 8 fathoms water, with the northern end of the town bearing about W. $\frac{1}{4}$ S., distant half a mile; being entirely open to the northward, it is only available for sailing-vessels during fine weather in the summer season, or with settled southerly winds. A vessel, however, well found in anchors and cables, and with sufficient cable out, would ride in safety most of the summer gales, although experiencing a considerable swell during its continuance. A berth for a large ship is in 12 fathoms, sand, with the eastern extreme of the fortifications bearing about S. $\frac{3}{4}$ W., and the northern extreme of the fort S.W. by W. $\frac{1}{4}$ W. The bottom can be seen in 6 or 7 fathoms water.

Armyro and Rhithymno bays are separated by a long strip of rocky coast, 6 miles in extent. The bottom in them is clean sand, and the depth of water diminishes gradually towards the shore, affording good temporary anchorage. The sandy shore of Rhithymno bay terminates at Cape Maletzi, about $7\frac{1}{4}$ miles eastward of the town.

Mount Psiloriti or Ida.—At Cape Maletzi, the spurs of Mount Ida, or Psiloriti of the moderns, extend to the sea, and advance to the northward 3 or 4 miles beyond the general direction of the coast, for a distance of more than 20 miles, forming the rocky Capes Liano Kavro, Khondro Kavro, Stavros, and Dhia. Mount Psiloriti or Ida, about 8,060 feet above the sea, when seen from the north-westward, has a lofty conical form, but with a broad undulating summit from the northward, and north-eastward, and opposite directions.

In the light immediately westward of Khondro Kavro is a recently-constructed village, affording a good landmark, called Kastelli Melapotamo.

It is very exposed to the northward, but is a fairly important place. Landing is reported to be possible at all times on a small sandy beach about 500 yards to the westward of the usual landing place, under the lee of rocks which are nearly awash.

Bali bay, 7 miles eastward of Liano Kavro, has a cove on its western side, where coasting craft anchor and secure to the shore, finding shelter from the northerly gales of summer, which in general, blow from N.N.W. and North. It is only available for coasters, but is mentioned here as being a place of refuge for vessels of light draught in case of need where, by dropping an anchor off the mouth of the

Plan on 217.
Lat. 35° 22' N.
Long. 24° 29' E.
Var. 4° 45' W.

Chart. 2,536.
Var. 4° 40' W.

Lat. 35° 25' N.
Long. 24° 49' E.

Chart, 2,536a.
Var. 4° 40' W.

cove in about 6 or 7 fathoms, and hauling it under its northern point, good shelter may be obtained during the usual summer gales. Its position may be known by two sharp peaks rising just over it, to the westward of which are two or three old towers on a lower ridge rising gradually from the coast at the end of Rhithymno beach.

This cove seems to have been a recognised port of Crete in ancient days, as the Panormus Portus, or Astale of the Stadiasmus, there being no other harbour on this part of the coast with which to identify it; the ruins of a small coast town and fortress exist about 5 miles to the westward, but there is no port there.

Current.—The navigating officer of H.M.S. *Scout* reported that during the month of April, 1897, the currents appeared to be very variable between Akrotiri and Candia bay, but that an easterly current was generally experienced, the wind being usually from a direction westward of north and south.

The navigating officer, H.M.S. *Minerva*, reported that during the month of June, 1905, very little current was experienced on the north coast of Crete, but what there was was always to the eastward. A curious phenomena appears off this coast, after a N.W. gale. The water becomes a pale green for a distance of from one to 2 miles, according to the length of time the wind has been blowing, having the appearance of shoal water, the line of demarcation between it and the outer blue water being very distinct.

Chart, 2,536b.

Cape Stavros, about 9 miles eastward of Bali bay, is a very conspicuous low-lying point, having a long tongue, and is a very good mark when approaching from eastward or westward. Phodele bay on the western side of Cape Stavros, is of no importance.

Cape Dhia, about 2½ miles east-south-east from Cape Stavros, terminates the high and rugged coast which separates the bay of Rhithymno from the bay of Candia, and is clear of danger. Cape Dhia has a small rock off it, which looks like a sail when approaching from the westward.

Panagia point.—This headland, 1½ miles south-eastward of Cape Dhia, has two projecting points. The northern one may be known by its very rugged, barren appearance, having on its summit, which is 270 feet high, no vegetation whatever. The south-eastern projection is called Panagia point, possesses some vegetation, is lower, and has a more even top than the 270 feet summit.

Lat. 35° 21' N.
Long. 25° 3' E.

Rodia.—From Panagia point, the coast trends westward of south for 2¾ miles; here its character changes to that of a low shore which continues eastward 3¾ miles to Megalo Kastron. Two miles southward from Panagia point, is the little valley of Rodia, which descends from a village of the same name, situated high on the sides of the mountains over that shore; off this valley there is anchorage.

Here, the Venetian merchant vessels of large burthen used to anchor in the summer season, in order to embark their cargoes direct from Crete, and here they would be quite safe between April and November. A fort called Palaio Kastro commanded the roadstead in the time of the Venetians, and its remains exist on a rock just over the mouth of the Rodia valley.

The anchorage is in from 15 to 25 fathoms water, at 2 and 3 cables from the base of the ruined fort, where there is good shelter in all ordinary gales from the northward, as they seldom veer to the eastward of N.N.E., except in the winter months.

Water.—A supply of good water can be easily obtained from the mouth of the large rivulet which flows into the western part of Candia bay near Armyro, but not at the Armyro rivulet, as that is brackish.

MEGALO KASTRON or **Candia town** (ancient *Heraklea*) is situated on the low shore of Candia bay, 7 miles south-eastward of Cape Dhia, with a small artificial harbour. The fortifications surrounding the town, have a circumference of about $2\frac{1}{2}$ miles, and although much injured by the memorable siege it endured before the Turks took it from the Venetians in the year 1669, and from recent earthquakes and neglect, monuments of the skill and wealth of this once powerful republic still exist. Plan 1904.
Var. $4^{\circ} 40'$ W.

This town was perhaps unequalled by any coast town in the Levant for strength and beauty, and bears evidence of having been a fine as well as a large city; several churches, fountains, and public buildings of that time still remain, although they are now mostly in partial ruin, caused either by the earthquake of 1856 or from previous neglect.

The Greek church with a dome and two square towers on its eastern side, is the most conspicuous object in the town.

A short distance from Megalo Kastron are the remains of the Minoan city of Knossos discovered in 1901.

The population of the town of Megalo Kastron or Candia in 1900 was 22,774.

The harbour at the north-east angle of the town, is formed by two moles, the western one running out N.E. by E. $\frac{1}{4}$ E. 320 yards; the eastern extending N. by E. $\frac{3}{4}$ E. 130 yards, leaving a breadth in the entrance of about 50 yards. In summer and in fine weather a vessel drawing 12 feet water may enter, but in winter or with any swell on, a vessel should not draw more than 10 feet. Strong north-east winds are said to reduce the water in the harbour. In 1905, it was reported that sand had so filled the harbour, that only small sailing vessels could enter. Lat. $35^{\circ} 20'$ N.
Long. $25^{\circ} 9'$ E.

There are no jetties in the harbour, nor cranes to facilitate the landing of heavy articles; 10 or 12 vessels from 100 to 150 tons can find accommodation within it.

Lieut. G. B. Hutton, of H.M.S. *Starling*, in September 1889, remarks: "The northerly wind here causes a very nasty sea at the entrance of the harbour, and a vessel secured alongside the west mole, under the lighthouse fort, must look well to her moorings." The *Starling* carried away her bower cable, a $2\frac{1}{2}$ -inch steel wire, and a 4-inch hemp hawser during one night. The safest plan is to lie with bow towards the west mole, secured by the two bower cables to bollards, and the stream-anchor out astern.

LIGHT.—A fixed white light is exhibited at an elevation of 70 feet above the sea, from a tower on the extremity of the mole on the northern side of entrance to Megalo Kastron, visible in clear weather from a distance of 12 miles.

Anchorage.—There is good anchorage in the road off the town during summer, for a well-found vessel, at about three-quarters of a mile northward of the lighthouse, in 18 fathoms water, muddy sand. A steamer may anchor in 9 fathoms, 3 cables from the lighthouse; but a vessel which cannot enter the harbour, and is waiting for a cargo in winter, will find either East bay, or Panagia creek at the head of Middle bay, in the island of Standia, a safe anchorage to remain in; Panagia is the more sheltered, and here the merchant ships of large burden in the time of the Venetians used to lie to discharge or receive their cargoes from sailing-lighters sent out from the town.

In order to avoid fouling the telegraph cables, vessels are recommended not to anchor to the eastward of a line drawn N. 41° E. from the east (inner) corner of the breakwater.

Plan, 1,904.
Lat. 35° 20' N.
Long. 25° 9' E.
Var. 4° 40' W.

The navigating officer, H.M.S. *Diana*, states that in July and August a continuous N.W. wind is experienced at the anchorage, which moderates at night, freshens at sunrise, and attains its full strength about noon, attaining considerable strength and raising a heavy sea at the anchorage.

The navigating officer of H.M.S. *Anson* which was anchored off the town in the winter of 1898, considers that signs of a coming northerly gale are a swell, and drop in temperature. He also noticed that the belt of light-coloured water which usually fringes the shore to beyond the large ships' anchorage, was much narrower a few hours before a northerly gale.

H.M.S. *Hebe* was anchored during July and August, 1899, 2 cables N.E. from the lighthouse, which position generally gave her boats a leading wind to and from the harbour.

Supplies.—Fresh meat, vegetables, and fruit are obtainable, but no coal for steaming purposes.

Communication.—There is weekly communication by the Austrian Lloyd's steamers, with Trieste, Peiræus, Constantinople, &c.; and weekly communication with the ports of Turkey, Egypt, and Greece, by the following companies, viz.: Courtzi Co. of Constantinople, Panhellenic, and Greek Co. of Syra. Fortnightly by the Mahsûse Co. of Constantinople, whose steamers run two direct lines, viz.: one to Alexandria and back, and the other from Constantinople, touching here, and thence to Benghazi, Tripoli, and Malta, returning over the same route.

Consul.—A British Vice-Consul resides here.

Trade, Shipping.—The exports, consisting principally of olive oil, wine, soap, locust-beans, fruit, and silk, were valued at 307,000*l.* in 1906.

The imports, consisting principally of flour, salt fish, tobacco, petroleum, timber, iron, cotton and woollen goods, were valued at 340,290*l.* in that year, of which 93,500*l.* came from the United Kingdom.

In 1906, 424 steam vessels of 264,247 tons, and 424 sailing vessels of 19,391 tons entered the port; of these 3 steam vessels of 6,683 tons, and 21 sailing vessels of 1,948 tons were British.

Telegraph cables are laid from Megalo Kastron to Khania, Sitia bay, and Rhithymno, in Crete; communication with the outer world is had by means of cable direct to Syra, and *viâ* Sitia bay to Rhodes and Alexandria.

Chart, 2,536b.

STANDIA ISLAND (ancient *Dia*), lying nearly 6½ miles north-eastward of the town of Megalo Kastron, is an elevated mass of limestone, bare and sterile throughout; its highest part, near the centre, rising 870 feet above the sea. The island is 3 miles long, and 2 miles wide; its northern coast is precipitous, and its southern is steep also, but indented with four bays, three of which afford anchorage and shelter from northerly gales. These bays are useful for coaling and similar operations in northerly winds.

There are rabbits and goats on the island, quite wild, but difficult to reach in consequence of the heavy nature of the ground.

Plan, 2,982.

East bay would hold 15 or 20 small vessels when moored with their sterns to the shore, and an anchor in the centre, in not less than 14 or 15 fathoms water, from whence they would not drag with southerly winds, as the bank is steep and the holding ground good.

A conspicuous stone block lies close to the shore at the head of East bay, which, bearing N. 4° E., makes a good mark for the centre of the bay.

A wreck lies about 15 yards off the point on the east side of the bay, 2½ cables S.S.E. from the stone block above mentioned.

In August 1897, H.M.S. *Scylla* anchored in the mouth of this bay in 43 fathoms, with the east side of the stone block bearing N. 7° W., and Middle bluff (the point dividing East and Middle bays) bearing West. Plan, 2,982.
Var. 4° 35' W.

In February of the same year, H.M.S. *Nymphe* found good anchorage in 17 fathoms in the centre of the bay, with the stone block bearing N. 4° E. distant $1\frac{1}{2}$ cables, but as the distance between the 5-fathoms lines on each side is less than $1\frac{1}{2}$ cables, the head of the bay is not suitable for long ships.

Middle bay, the next westward, has a well-sheltered creek at its head, named Panagia, running north-easterly to the mouth of a rocky ravine. Here, a few vessels can secure to both shores, and the tranquility of the creek with the depth of water alongside the shore, renders it a most convenient place to effect repairs. Lat. 35° 26' N.
Long. 25° 14' E.

Middle bay should be used by large ships, anchoring in 38 fathoms in the centre of the bay.

Directions.—As anchoring-marks, a pair of temporary beacons, white-washed, were put up in 1897 on the point at the head of the bay, dividing Panagia creek from the cove westward of it. Another pair were erected near the west shore, $1\frac{3}{4}$ cables northward of Cliff point, the west entrance point to Middle bay. The point of intersection of these lines bears about N.E. by E. $\frac{1}{4}$ E., distant $2\frac{1}{2}$ cables from Cliff point.

As it is necessary for a large ship to anchor exactly in the middle of the bay, it is best before arriving in position, to ease down $2\frac{1}{2}$ shackles of cable, and the remainder on the spot, to avoid being drifted away by the strong, eddy winds while the whole 3 shackles were being eased down. The northern beacons in line, bear N. 18° E., and the western pair, N. 78° W. when in line.

Royal Oak bay, the next west of Middle bay, affords, for vessels less than 350 feet in length, more shelter than Middle bay. The depth of water is about the same, bottom, sand and shells.

West bay is of little service.

Islets.—Two islets lie close to Standia, one named Glaro-nisi or Gull islet, to the north-westward, and Paximadi, 355 feet high (reported in 1905 to be only 145 feet high), to the eastward, off which the water is very deep. Between Glaro-nisi and Standia a rocky reef, partly above water, almost closes the passage between them. Chart, 2,536b.

Water.—There is no good water on Standia island, but it may be procured at the Kartaro river, $2\frac{3}{4}$ miles eastward of Megalo Kastron.

OVO, a precipitous rock or islet, 170 feet high, lies 18 miles N.E. by E. $\frac{3}{4}$ E. from the north-east point of Standia, and has deep water all round it. Lat. 35° 36' N.
Long. 25° 35' E.

CAPE KHERSONISOS lies 12 miles eastward of Megalo Kastron, and the coast is nearly straight between them. The cape may be known by three windmills and a church upon it. Plan on 2,715.

The interior of Crete between Megalo Kastron and this cape, is comparatively low, being a depression lying between the eastern base of Psiloriti or Mount Ida, and the third highest range of mountains called Lasethe, which rises to a height of 7,100 feet, southward of the bay of Malea.

Rocks.—A rock lies at the foot of the cape, and shallow water extends nearly 2 cables outside it. At a little more than half a mile southward of the cape, is another rock, square, and 7 feet high, called Square rock, with sunken rocks around it; between the cape and Square rock is Khersonisos bay.

Plan on 2,715.
Var. 4° 30' W.

Khersonisos bay.—During the summer gales, which prevail from the north-north-west, coasting craft and local traders take shelter in Khersonisos bay, close under the cape, in 5 or 6 fathoms water, sand and weed, or anchor there to load with carobs or grain, the main produce of this district. H.M.S. *Spitfire* found good shelter under Cape Khersonisos during a strong northerly summer gale, although the swell was a little inconvenient. A good anchorage for a large ship is in 9 to 10 fathoms, $5\frac{1}{2}$ cables N. 64° E. from the ancient fortress of Khersonisos.

Southward of the bay, is the small peninsula and ancient port of Khersonisos, the harbour of Lyttus, a city of some celebrity in the early history of Crete, and situated on the flanks of the Lasethe mountains. The port is now too shallow to be available, although the moles exist, besides a theatre and other remains of this once flourishing seaport town.

Chart, 2,586b.

Malea bay affords poor anchorage ground, the bottom to the eastward of Khersonisos being shallow and rocky for half a mile. H.M.S. *Diana*, in 1905, anchored in 16 fathoms with a white hut on the islet off Malea village, in line S. 10° E. with some red roofed sheds on the foreshore, which indicate the position of the village. From the head of the bay, the bold coast trends in a general easterly direction for nearly 17 miles to Cape St. John or Spinalonga.

CAPE ST. JOHN or SPINALONGA, 300 feet high, is well known to the local mariners for the force and constancy with which the northerly breezes blow from within a few miles of it, towards the deep Gulf of Mirabella, and over the Isthmus of Hierápetra at the head of this gulf, which is the narrowest and lowest part of the island of Crete, being only 6 miles across to the southern shore.

Lat. 35° 20' N.
Long. 5° 37' E.

LIGHTS.—On the extremity of Cape St. John or Spinalonga, two *fixed white* lights placed *vertically* are exhibited, the upper being 154 feet above the sea; they should be visible in clear weather from a distance of 12 miles.

Plan on 2,850.

SPINALONGA HARBOUR is a spacious sheet of water, enclosed by a long peninsula, also called Spinalonga, immediately south-westward of Cape St. John. Although the southern part of the harbour has from 4 to $4\frac{1}{2}$ fathoms water over a great portion of it, a bank with only 12 feet on it stretches across from the north end of the peninsula to the mainland of Crete, and thus renders this fine inlet available for coasters of light draught only. The anchorage for larger vessels is thus limited to a small space just north of the fortified islet, lying close off the northern end of the peninsula, but being so immediately under the high precipices of Cape St. John, it is difficult and dangerous for sailing-vessels to enter, in consequence of the frequent and violent squalls which descend from this stormy point.

Vessels not exceeding 18 feet draught of water will find safe anchorage westward of Spinalonga island, with the north end of it bearing E. by N. 2 cables, and the mouth of a gully on the north shore bearing N. $\frac{3}{4}$ W. S.S.W. winds are squally, but South winds blow steadily and right down the harbour.

Spinalonga has a Health-office within the dilapidated fortress built by the Venetians on the islet. The island is inhabited by about 80 Mohammedan families who maintain themselves by fishing, and coast trade, and have the reputation of being skilful and excellent seamen; they have a few schooners and caiques, and carry on a trade

Chart, No. 2,836a.

with Asia Minor for grain and wood required to supply the larger towns of Crete. Spinalonga produces grain and whetstones, for the latter of which it has always been noted, the best Turkey stone coming from here.

Supplies.—Provisions of all kinds may be obtained here at moderate prices.

PORT KOLOKITHIA, on the eastern side of Spinalonga peninsula, is formed by the islet of Kolokithia, which is narrow, and half a mile in length north and south, with a passage at either end. The port is open to the north-eastward, and therefore never frequented as a winter anchorage. There are rocks extending a little off from both points of the northern entrance, in which there is 10 to 17 fathoms water in mid-channel. The southern entrance is contracted by shoals from either side, leaving a narrow tortuous passage into the port, carrying only 15 feet water. It was probably the port of *Olontia* in ancient times, the ruins of which city are seen upon the Poro isthmus. A great part of the city has been submerged by a recent subsidence of the eastern part of Crete, which nearly made Spinalonga an island also, for the isthmus is only now just above the sea level, and with strong north winds the sea beats over it.

PORO BAY ANCHORAGE.—On the southern side of the peninsula of Spinalonga, is a fine bay more than a mile wide, called Poro, where there is excellent shelter in a northerly or north-easterly gale for a squadron, and good holding ground of muddy sand and weed, in from 15 to 20 fathoms. This is the only bay eastward of Suda, for which a large vessel could run for shelter in the winter season when caught in a north-easterly gale. It is open to the S.E., but as the fetch is only 7 or 8 miles across the Mirabella gulf, a well-found vessel would ride any gale out from that quarter, or, by watching the ample warning then always given by the barometer when changing from north to south, could put out to sea.

Coral bank.—Vessels anchoring, should avoid this bank with coral bottom. The centre, with 17 fathoms, bears W. by S. $6\frac{3}{4}$ cables from Cape Vagi, the north-eastern entrance point of Poro bay.

PORT NIKOLO or Mirabella is formed between the coast and the two islets of Agios Antonio or Nikolo nisi, and Mikro nisi, the former much the larger, being $4\frac{1}{2}$ cables in length north and south, and 140 feet high. Mikro is $1\frac{1}{2}$ cables in length, 75 feet high, and separated from Nikolo on the south by a passage 50 yards wide, and one fathom deep. These islets lie about 3 miles south-south-west of the peninsula of Spinalonga, and are $3\frac{1}{2}$ cables from the nearest part of the mainland of Crete.

LIGHT.—A *white and red fixed* light is exhibited, at an elevation of 94 feet, from a white iron mast over a white house, 27 feet high, near the north point of Mikro nisi. It should be visible in clear weather from a distance of 13 miles in the *white* and 6 miles in the *red* sector. For sectors *see* Light List, Part V., and chart.

Mikro nisi rock, with 3 fathoms water on it, is on the outer end of a bank extending E. by N. $1\frac{1}{2}$ cables from the north point of Mikro nisi.

Nikolo islet, 2 feet high and surrounded by shoal water, is situated W. $\frac{1}{2}$ N. $4\frac{1}{2}$ cables from the same extremity of Mikro nisi. In the narrow passage between Nikolo islet and the main, distant $1\frac{1}{2}$ cables, there is a depth of 5 fathoms.

The south extreme of the small promontory westward of this islet, is named Nikolo point, and westward of this promontory a shallow narrow creek runs in N. by W., 3 cables.

Plan on 2,850.
Var. $4^{\circ} 30'$ W

Lat. $35^{\circ} 12'$ N.
Long. $25^{\circ} 44'$ E.

Plan on 2,850.
Var. 4° 36' W.

Nikolo rock, with $2\frac{1}{2}$ fathoms on it, lies S. by E. $\frac{1}{2}$ E., distant $1\frac{1}{2}$ cables from Nikolo point. Westward and northward of this rock, there are depths of $5\frac{3}{4}$ to 7 fathoms, while in the main channel between the rock and Agios Antonio, distant $2\frac{3}{4}$ cables, there is a depth of 9 fathoms.

Lat. 35° 12' N.
Long. 25° 44' E.

Six-fathom patch is a rocky bank with that depth on it, lying nearly 2 cables westward of the north point of Agios Antonio.

Anchorage for coasting vessels.—This anchorage in 8 to 9 fathoms is on the north-west side of Agios Antonio, and eastward of Six-fathom patch, and this part of the port is always preferred by the local traders and Levant sailors, who are acquainted with it, to Spinalonga, for with one anchor to the westward and a stern-fast to Agios Antonio, a vessel will lie land-locked.

Principal anchorage.—This anchorage in 7 to 8 fathoms over sand, weed, and shells, is in the southern part of Port Nikolo, and westward of the south end of Agios Antonio; it is partly sheltered from the southward by Mavro Kavo, a rocky point, upon which are some ruined habitations and churches of what was in the time of the Venetians, a small fishing and trading town, called the Borgo di Mirabella, and was then the chief place of trade in this neighbourhood, its port being then also preferred to Spinalonga, that being a coast garrison only. This seems to have been the ancient *Kamira*.

Here, south of Nikolo rock, there is anchorage space about 3 cables in diameter, with a passage in from the south-eastward, 2 cables broad, between the 5-fathoms lines on each side, and a depth of 7 fathoms.

Pratique.—Vessels can obtain pratique here, a Health-office and a Custom-house having been established.

Exports.—Carobs and oil are the chief exports of the Mirabella district, of which a few cargoes are annually exported to Europe and to Constantinople, and the produce is increasing.

Telegraph.—Mirabella is a telegraph station.

Chart, 2,536.

Water.—The only place in the Gulf of Mirabella, where a vessel can procure water, is at the valley southward of Port Nikolo, where by sinking a well 3 or 4 feet deep in the bed of the dry water course, and at a few yards from the sea, an abundant supply of excellent water may be procured at all seasons.

Paschiamo.—At the head of the Gulf of Mirabella, anchorage may be obtained at 2 cables from a landing place called Paschiamo, and to the southward of Kunithia island. From here a good carriage road leads to Hierápetra on the south coast of Crete.

At Gurnia, near here, the remains of an extensive city of the Minoan period have recently been discovered.

PSYRA ISLET, on the south-east side of Mirabella gulf, is about a mile in length north-east and south-west, and its summit 693 feet high. Halfway across the Gulf of Mirabella, in a straight line from Psyra to the islet of Agios Antonio or Nikolo nisi, lies Mirabella bank, having only 24 fathoms water on it, close to a depth of 124 fathoms.

Soundings.—Generally speaking, along the northern coast of Crete, the 100 fathoms line of soundings is at about 4 miles from the coast, except near the projecting capes, where it seldom exceeds $1\frac{1}{2}$ miles from the shore.

SITIA PENINSULA.—On the eastern side of the Gulf of Mirabella, is the beginning of the large peninsula and Eparchia of Sitia, from which rises the fourth group of mountains of Crete. Aphendi Vuno, the highest point, immediately over the Isthmus of Hierápetra at the commencement of the promontory, is 4,850 feet above the sea. The whole peninsula is very mountainous, and has several upland plains and fertile valleys, the largest being that of Sitia.

Chart, 2,536b.
Var. 4° 25' W.

Cape Sitia, the western entrance point of Sitia bay, has shoal extending from it two-thirds of a cable, in a north-easterly direction.

Plan on 2,724.
Lat. 35° 13' N.
Long. 26° 8' E.

LIGHT.—On Cape Sitia is a lighthouse, from which a *red fixed* light is exhibited, visible in clear weather from a distance of 6 miles. It is reported not to be visible when bearing eastward of S. 48° E.

SITIA BAY.—At the mouth of the valley of Sitia, is a wide bay open to the north, and bounded on the east by the long and indented promontory of Sidero. At the western angle of the bay, one mile from Cape Sitia, and standing upon a gently sloping but rocky shore, are the ruined fortress and town of Sitia, built by the Venetians, close under which there is good anchorage with shelter from the prevailing northerly winds. A chain should be carried to the shore under the fort, as a bow-fast for all vessels of light draught, or at about 2 cables northward of it, by all large class trading vessels desiring to anchor here, where, with the outer anchor in 7 or 8 fathoms water, mud bottom, 1½ cables from the shore, Cape Sitia affords shelter from north-westerly winds as far round as N.N.E., to the eastward of which point it rarely blows until after Christmas.

Anchorage for large ships will be found in 15 fathoms over mud, E. ½ S., distant half a mile from the pier.

A fort stands on the northern side of the town, near the ruins of the Venetian fortress. The Venetians had bollards or mooring posts cut in the rocky shore for the convenience of their vessels trading or stationed here, which is a further indication of its security.

Water.—There is a well of excellent water close to the angle of the bay, which is supplied by a copious spring, that never fails or diminishes.

Pratique.—Supplies.—A Health-office and a Custom-house have been established here. Vessels can now obtain pratique, and some supplies.

Telegraph.—Submarine cables, from Alexandria, Megalo Kastron, and Rhodes, are landed at Sitia. The town is also a telegraph station.

YANISADES islets, four in number, lie off Sitia bay at 6½ miles north-north-eastward from Cape Sitia. Yanisada the southern islet, is 485 feet high, while Dragonara, the next north, is 15 feet higher, and the largest; they have deep water all round them, are each about 2 miles long, and can be seen from a distance of about 30 miles. Paximada, the northern, is about three-quarters of a mile long. They extend over a distance of 3¾ miles north and south, are the ancient *Dionysiades Insulæ*, and were once the haunt of pirates.

Chart, 2,536b.

SPITFIRE ROCK.—This dangerous rock, about 12 yards in extent, rising from deep water, and having less than 6 feet water over it, lies nearly midway between the east end of Yanisada and Cape

Plan on 1,555.
Lat. 35° 19' N.
Long. 26° 16' E

Plan, 1,555.
Var. 4° 25' W.

Sidero, exactly in the track of vessels running to leeward of the Yanisades, with the prevailing N.N.W. winds of summer.

It bears W. $\frac{1}{2}$ N. distant 3 miles from Cape Sidero, and may be passed northward of by keeping the southern side of Yanisada islet bearing southward of West; on the latter bearing, Cape St. John is well shut in. Cape Sidero, in line with the north side of the islet of the same name near it, bearing S. 79° E., also leads northward of the rock. Mount Mothès, 1,776 feet high, in line with Black islet (south-westward of Cape Mavro) S. 14° W., leads westward of the rock (*See* views on chart, No. 2,536*b*).

On the southern side of entrance to Port Kereamathi, are two small islets about half a mile apart, 34 and 36 feet high, which when in line bearing S. 27° E., lead very close westward of Spitfire rock, and therefore the southernmost islet should be kept open to right or south-westward of the northern; these two islets are near, conspicuous, and cannot be mistaken.

Coast.—The promontory of Sidero, for 4 miles south-westward of the cape of that name, is very irregularly formed, the north-eastern portion being almost divided into two islands, by Ports Tenda and Kereamathi on the north-west side almost meeting small bays on the opposite side.

Port Tenda, the south-western of these ports, has a bay in each corner affording shelter with off-shore winds, but the distance of $1\frac{1}{2}$ miles between the entrance points of the port expose it to north-westerly winds.

Lat. 35° 17' N.
Long. 26° 16' E.

Rock.—A rock with less than 6 feet water over it, lies N.N.E., 3 cables from the south-west entrance point of Port Tenda, and eastward $1\frac{1}{2}$ cables from this rock is a patch of 4 fathoms. Westward, 3 cables from the point dividing Ports Tenda and Kereamathi, is the south-easternmost of the two little islets, which, when in line, lead very close west of Spitfire rock, and already alluded to.

Rocks with less than 6 feet water on them, lie $1\frac{1}{2}$ cables N.E. by N. from this islet.

Port Kereamathi is an inlet running in about three-quarters of a mile, and is used only by country boats.

Pinnacle rocks, above and below water, lie $1\frac{1}{2}$ miles westward of Cape Sidero, the outer part being a quarter of a mile from the shore of the promontory.

Sidero islet, 18 feet high, and a quarter of a cable in diameter, lies W. by N. $5\frac{1}{2}$ cables from cape Sidero.

A rock with less than 6 feet on it, lies N.E. by N. nearly a cable from Sidero islet.

CAPE SIDERO, the north-east extremity of the island of Crete, is surmounted by a hill 727 feet high, half a mile south-west of it. The cape when bearing about W.N.W., appears like an island.

LIGHT.—About 100 yards from the extremity of Cape Sidero is a lighthouse, from which is exhibited at an elevation of 148 feet above the sea, a *flashing* light, the flashes occurring *every minute*, and visible in clear weather from a distance of 11 miles. The light is obscured by Elasa island, and by the Yanisades.

SIDERO REEF, consisting of rocks, dry and awash, lies 3 cables eastward of the cape, with a depth of 10 to 15 fathoms between. The reef extends a third of a mile in a north-west and south-east direction, and the eastern elbow in the depth of $3\frac{1}{2}$ fathoms, bears East 9 cables

from the lighthouse. North-eastward of Sidero reef, are two isolated shoals of $3\frac{1}{4}$ and 4 fathoms, bearing E. $\frac{3}{4}$ N., distant $1\frac{2}{10}$, and $1\frac{4}{10}$ miles, respectively from Cape Sidero lighthouse. In rounding these dangers, the cape should be given a berth of 2 miles; from the westward, keep the passage between Dragonara and Yanisada just open, or the extremes of the two islands touching, bearing about W. $\frac{3}{4}$ N., until the eastern extreme of Elasa island bears S. by W. $\frac{1}{2}$ W.

Plan, 1,555.
Var. $4^{\circ} 25'$ W.

Port Ioannis is the name given to a small cove on the east side of Cape Sidero; the port has a depth of 2 fathoms, and the head of it is distant from the lighthouse about 150 yards. The cove affords shelter to the smaller class of coasting craft, and being almost screened under the cliffs and hills, was formerly the hiding place of piratical row-boats, that lay lurking here and in the islands off it. In the summer and autumn, the neighbourhood is frequented by numerous sponge-boats.

Wreck rocks.—These rocks are awash, and lie with the outer one bearing S.E. $\frac{1}{2}$ S., distant three-quarters of a mile from Cape Sidero lighthouse. Lying a third of a mile from the shore, they add to the difficulty of attempting the channel between Sidero reef and the cape.

Dhaskalia island, 20 feet high, is situated 2 cables off the south point of the small bay opposite Port Kereamathi, with a 15 fathoms channel between it and the shore; shoal water extends nearly a cable off its south-eastern extreme. In the bay there are depths of 7 to 25 fathoms where a small vessel might obtain shelter in northerly or westerly winds.

ELASA ISLAND.—The flat, but high island of Elasa is $1\frac{1}{4}$ miles in length, and lies with its north-west extremity bearing S.S.E. distant $2\frac{1}{4}$ miles from Cape Sidero; on its southern side, in a small creek which used to afford a hidden retreat to the piratical craft of modern times, and to the galley-rover from Algiers in more ancient days.

Lat. $35^{\circ} 16'$ N.
Long. $26^{\circ} 21'$ E.

Coast.—From Cape Sidero, the eastern coast of the promontory trends south-westward 4 miles to Eremopoli bay, thence southward $4\frac{1}{2}$ miles, when it curves eastward 2 miles to Cape Plaka, forming Grandes bay. Chart, 2,536b.

Eremopoli bay is convenient for vessels in the summer months when unable to contend against the then prevailing winds and currents from the northward, and bound for Constantinople or into the Archipelago from Alexandria or Africa. The anchorage for large vessels is in from 12 to 17 fathoms, at about half a mile N.E. by E. from Black rock; coasting craft go farther in. The bottom is muddy sand with weed, and fair holding ground. Plan on 2,715.

GRANDES BAY.—**Kuremeno**, 3 miles southward of Eremopoli, is a sandy bay, on the northern side of the red conical hill of Palao Kastro, 292 feet high, and affords good shelter during southerly winds in from 9 to 10 fathoms water, whence it shoals gradually to the shore. Plan on 2,724.

Kuremeno is quite equal to Eremopoli, as a place of shelter during the summer gales from north to north-west, and can be quitted without difficulty, immediately the gale moderates.

Grandes islands, in the southern part of the bay of that name, and three-quarters of a mile north-westward of Cape Plaka, consist of a narrow islet, 7 cables long north-east and south-west, 105 feet high, and a small islet 30 feet high, a cable off its south-west extremity.

Plan on 2,724.
Lat. 35° 13' N.
Long. 26° 19' E.
Var. 4° 25' W.

Grandes reef.—A small islet, 8 feet high, lies nearly a cable from the north-east end of the large island. From this islet, a reef with less than 6 feet water on it, extends N.E. by E. 3 cables, and is generally indicated by ripples or breakers upon it.

A well-found vessel will find good shelter with northerly gales, south of Grandes island, but in not less than 18 or 20 fathoms.

Supplies.—No supplies can be obtained, but partridges are abundant on the hills in the vicinity.

Water.—There is a well of good water above 400 yards from the beach, near the foot of Palaio Kastro hill, where a vessel might procure a little water in case of need by rolling casks to and from it.

CAPE PLAKA is a level, but high projection of the coast, situated S. $\frac{1}{4}$ W., distant nearly $7\frac{1}{2}$ miles from Cape Sidero. It is the most easterly point in the island of Crete, although less conspicuous as a headland than Cape Sidero. The water is deep close to its eastern side, and to within half a cable of its northern extremity.

Chart 2,536b.

COAST.—**Caruba bay**, on the southern side of Cape Plaka, likewise affords anchorage with northerly gales, but is subject to strong gusts from the high land over it.

Zakro shoal, with 9 fathoms on it, is the shallowest part of a bank $4\frac{1}{2}$ miles southward of Cape Plaka, and one mile from the coast.

Zakro bay is small, and $6\frac{1}{2}$ miles to the southward of Cape Plaka. Near the village, is a small plain confined between precipitous and barren ridges enclosing the valley, and which have all remarkable flat summits and naturally terraced sides, particularly the hill over the northern side of the bay. Zakro is on the site of the ancient *Itanos*.

The Kavallos are three rocky islets lying close to a point 4 miles south-westward of Zakro bay, with deep water close to them. Vessels may anchor north-eastward of these islets, at about half a mile from the shore, in from 12 to 15 fathoms water, on a sandy bottom; but the gusts from the mountains during northerly winds, descend with such violence all along this coast from Zakro to Hierápetra, that it is not advisable for any wind-bound vessel to bring up here, if she can work up to Grandes bay, or for a sailing-vessel even to approach it nearer than 4 or 5 miles, and never with such winds to attempt to pass through the Kupho channel, for such is the force and suddenness of these squalls that very little canvas can be shown to them.

Lat. 35° 2' N.
Long. 26° 14' E.

Kavallos bay is the name given to the indentation north-westward of Kavallos islets.

The currents off the east end of Crete are variable, but more prevalent from the north-west or south-east, and run at a rate of from half a knot to a knot an hour.

KUPHO NISI, the largest of a group of islets, is nearly 2 miles in extent, and comparatively low, its highest point reaching an elevation of only 212 feet. It is less than 3 miles from the eastern part of Cape Guderú, in Crete, and is otherwise remarkable by its white cliffy coast, as this part of the mainland of Crete has no white cliffs.

Sponge reefs.—Two islets lie off the northern extreme of Kupho nisi, namely, Makrolo, 40 feet high, and Strongilo, 60 feet high;

extending for a distance of nearly half a mile northward of them, are three detached rocks called Sponge reefs, only a few feet under water. Chart, 2,536b.
Var. 4° 25' W.

Kupho channel.—Between Sponge reefs and Prassu nisia (a small islet 12 feet high 2 cables from the Cretan shore and about a mile eastward of the high steep headland of Cape Guderú), is a clear passage $1\frac{1}{2}$ miles wide, called Kupho channel. About one-third of a mile westward of Prassu nisia, is a rock awash.

Caution.—It is not advisable for a sailing-vessel to anchor northward of Kupho nisi during a southerly gale, as the wind often shifts so suddenly to the northward, that she might find it difficult to get away clear of the shoals lying near them after it has shifted, or be in danger of dragging her anchors during the gusts which would be then experienced.

South coast of Crete.—The south coast of Crete, having no secure harbour, has no trade except in summer; trade is then carried on by three or four small schooners only, and a few coasting boats. A large part of the produce is transported on mules to the trading towns on the northern coast, where foreign export is alone permitted, so as to prevent smuggling upon this coast; although there is a quarantine official at Hierápetra, he has no power to give pratique to a vessel coming from any other island or country, until he has communicated with the town of Megalo Kastron, or Spinalonga, to which latter place the bill of health must be sent by a special messenger, involving a delay of 3 or 4 days. Although there are no good ports on the south coast of Crete, there are anchorages off several bays during the summer months, or with northerly winds; but the water in general deepens very suddenly, and the bank or ground upon which anchorage can be obtained, is generally limited. There are a few dangers also, the most important of which are Kaloyeri reefs.

Cape Guderú.—From Cape Guderú (ancient *Erythræum* prom.), the coast trends westward, after forming the open bays of Makri-yalo and Kalonero; off the points which divide these bays, there are some shoal patches at from 5 to 6 cables from the shore, which should not be approached. Lat. 34° 59' N.
Long. 26° 47' E.

On the east bank of the river flowing into the sea on the north shore of Makri-yalo bay, and about 50 yards from its mouth, is a large monastery surrounded by a high white wall.

Photia-nisi is a small islet, 30 feet high, near the coast, about 11 miles westward of Cape Guderú, and north-east of the islet is a valley with good water; firewood may also be cut on the sides of the valley. The coast all along this part of Crete, is bordered by shallow water and rocks.

HIERÁPETRA.—At 18 miles westward of Cape Guderú, is the walled town of Girápetra, or, as more generally called by the natives, Hierápetra, at the commencement of a small plain that extends along the southern shore of the isthmus of Sitia. It was the site of the ancient city of *Hierapytna*, which attained some size and importance in the time of the Romans, and had an artificial port formed by two moles from rude blocks of stone. But the port or ports (for it seems to have had an inner as well as an outer one) are for the most part filled up, and the moles are partially ruined also. Plan on 2,715.
Var. 4° 30' W.

The modern town stands on the site of the inner and choked-up part of the port, and is in consequence low, swampy, and very sickly during the summer months. A loop-holed wall, with towers, built by the Turks, encloses it on the land side, and a small Venetian fort, stand-

Plan on 2,715.
Var. $4^{\circ} 30'$ W.

ing on the extremity of the point, commands its sea face. Hierápetra contains about 2,000 inhabitants, and has some little trade in oil, the produce of the plain lying to the north and north-westward of the town. The bay on its eastern side, affords anchorage in 5 to 6 fathoms on a clear sandy bottom, during northerly and north-westerly winds, but it is open and unsafe with southerly winds.

LIGHT.—A *red fixed* light elevated 30 feet above the sea is shown from the south-eastern corner of the Custom-house at Hierápetra; it is visible in clear weather from a distance of 5 miles from the bearing of N. 87° W. through north to N. 17° E.

Chart, 2,536b.
Lat. $34^{\circ} 52'$ N.
Long. $25^{\circ} 43'$ E.

GAIDARO-NISI.—At $7\frac{1}{2}$ miles south of Hierápetra is the long low island of Gaidaro-nisi, off the eastern end of which is a small conical-shaped islet named Mikro-nisi, higher than the large island, with only a boat passage between them. The island is surrounded by a bank of 30 to 50 fathoms.

Anchorage.—A vessel might run for, and anchor northward of the centre of Gaidaro-nisi, in the event of being caught too near the land in a south-east or southerly gale, and unable to gain an offing; but she should approach by the lead, and anchor in not less than 10 or 12 fathoms water, and a good half mile from the shore, as shallow and rocky ground extends more than 3 cables off, but the bottom is a clean white sand beyond. The vessel should, however, be prepared to weigh as soon as the wind veers to West and N.W., as it will soon do; so as not to be caught when the gale has settled in the north, with the island under her lee.

The best anchorage in a southerly gale is in about 8 fathoms at $3\frac{1}{2}$ cables N.E. of the north-eastern point of Gaidaro-nisi, when the centre of the small islet Mikro-nisi will bear about S. by E. $\frac{1}{2}$ E. The bottom is fine sand, but holds well if sufficient cable is veered; and in this position, if the wind shifts to N.W. or North, it would be practicable for a sailing-vessel to put to sea.

Lat. $34^{\circ} 59'$ N.
Long. $25^{\circ} 39'$ E.

KALOYERI REEFS, lying nearly $4\frac{1}{2}$ miles westward of Hierápetra, extend nearly a mile from the point which terminates the eastern spur of the Lasethe mountains, or from the end of the long olive grove extending along the coast westward of Hierápetra. The reefs have less than 6 feet water on them, and 10 fathoms close to them, and should be given a wide berth.

Keraton bay, 18 miles westward of Hierápetra, has a more spacious anchorage ground on account of its bank extending farther off the coast, but is not so well sheltered as Sudsuro from the westerly winds and swell. The large town and fertile district of Viano will be seen over the bay; it is the chief town of the district of Arkadia or Rhizo.

SUDSURO BAY, distant about $21\frac{1}{2}$ miles westward of Hierápetra, affords anchorage in from 7 to 10 fathoms water, at a quarter of a mile south of the shingle point, in front of the rocky gorge through which issues the rivulet that gives its name to the locality. This is an excellent watering place, and abundance of firewood may be also cut along the coast to the eastward of the Anapodari river, a much larger stream than the Sudsuro, and which falls into the sea, $1\frac{1}{2}$ miles eastward of it, but not so sheltered for watering. The Anapodari flows from out of the great Messaria plain, which is the finest district

of Crete, and, if cultivated to the extent of its capabilities, would almost meet the annual requirement of grain for the island. Chart, 2,536.
Var. 4° 40' W.

As the land over Sudsuro is low in comparison to the mountains on either side, and forms a sort of gap between the Lasethe mountains to the eastward, which are 7,100 feet high, and the Kophino mountains, 3,750 feet high, which extend immediately over the coast to the westward of Sudsuro, the bay is subject to strong winds during the northerly gales of the summer season, which escape across the island through this gap; the squalls, however, are not so violent as to render the anchorage as unsafe or even inconvenient, as under the Kophino mountains to the westward; the wind being less steady, the gusts are more violent in consequence.

Under the Lasethe mountains, on the contrary, it is generally calm with northerly winds, the calm extending to a distance of 5 or 6 miles from the land, sometimes more, beyond which the breeze is steady; local calms or squalls are consequently the embarrassments of navigating near the land.

Mount Kophino.—The highest point of the Kophino mountains terminates in a remarkable horn or pointed crag, 3,750 feet above the level of the sea, which, being seen from a great distance, forms a good landmark for recognising this part of the coast. (See view of the south coast, 4 miles south of Sudsuro bay, on chart No. 2,536b.) Lat. 34° 57' N.
Long. 25° 6' E.

CAPE KEPHALA (ancient *Leon* prom.) is a conspicuous headland 18 miles westward of Sudsuro, and in certain views, bears such a resemblance to a crouched lion as to merit the ancient appellation.

The ruins of *Lebena*, once the principal seaport town of Gortyna, are over a small bay, immediately on the eastern side of this headland, off which there is an anchorage in from 10 to 12 fathoms. The ancients hauled their vessels ashore under the town. It was celebrated for its temple to Esculapius. The invalid citizen of Gortyna no doubt found relief there from inhaling the pure sea air, and hence the temple.

KALO LIMNIONES (the Fair Havens, from whence St. Paul sailed previous to his shipwreck at Melita), is a small bay nearly 5½ miles westward of Cape Kephala. It is open to the eastward, but partially sheltered by two islets, St. Paul, and Megalonisi, which lie south-east and south-west of it. It is not recommended as an anchorage to winter in; although a vessel well found in anchors and chains, as in the present day, would have a better chance than in the days of St. Paul, by securing with stern-fasts to the shore, under the lee of, or on the northern side of the islet of St. Paul. With an anchor out to the N.E., in 7 fathoms water, and another to the N.N.W. in 8 fathoms, where the bottom is sandy mud and weed, and fair holding ground, she would be under the lee and well sheltered. Although the swell rolling round the point of the island during a south-east or southerly gale would be inconvenient, the vessel would not be endangered so long as the shore-fast held. Plan on 2 724
[926].

In 1905, H.M.S. *Minerva* anchored in 9 fathoms one cable North from the north-east point of St. Paul islet.

There is also anchorage in the roadstead with all westerly or northerly winds in from 10 to 20 fathoms, between St. Paul islet and Mavro nisi, the steep black rock or islet, 36 feet high, in the middle of the bay; but between Mavro nisi and Trapfo (lying close to the shore 7 cables north-eastward of St. Paul islet, there is a reef extending off 1½ cables from the base of a remarkable triangular cliff; which cliff, therefore, must not be approached too closely. On the shore within Trapfo islet, was the ancient town of *Lasea* or *Thalassa*. Lat. 34° 55' N.
Long. 24° 49' E.

Plan on 2,774.
Var. 4° 45' W.

The narrow passage between the western end of St. Paul islet and the coast, is deep and clear; but the passage between Megalo-nisi (196 feet high), and the shore, is obstructed by a shoal of 2½ fathoms water, lying nearly in mid-channel. The little islet of Papado Plaka, about a cable in length, lies 4½ cables westward of Megalo-nisi, and at about three-quarters of a cable north of it, is a 5-fathoms patch. It should not be approached too closely.

Water.—On the west side of the triangular cliff alluded to, is a valley with a dry watercourse; but by sinking a well in the beach, some 4 or 5 feet deep, and not more than 25 or 30 feet from the sea, a good supply of excellent water can be obtained. There is no other water in the bay, and the only inhabitants here some years ago were a few shepherds and the guards.

Chart, 2,536a.

CAPE LITTINOS terminates the Kophino mountains, at 3½ miles westward of Kalo Limniones, and forms also the southern extremity of the wide bay of Messara or Dibaki. It is a bold and well-defined headland, distinguished by a high wedge-shaped cliff, the cape forming the acute angle of the wedge.

MESSARA BAY is formed between Cape Littinos and Kavo Melissa, about 13 miles to the north-westward, and from the line joining these two capes the bay recedes 6 miles. The coast for 5 miles northward of Cape Littinos is formed of low white cliffs; and for 5 miles farther on, to the mouth of the Messara valley, near the village of Dibaki, the shore is low, with a clean sandy bottom off it, decreasing in depth gradually from 20 and 18 fathoms at one mile distant.

At Agia Triada, near Dibaki, extensive tombs and the remains of a palace have recently been discovered, all of the Neolithic and Minoan periods.

The northern shore of the bay is the base of the lofty Psiloriti mountain or ancient *Ida*, which, from this point of view, presents a long broad-backed summit, and not conical as from the north-western side of Crete. There is anchorage in any part of the bay in the summer season.

Plan on 2,536a.
Lat. 34° 59' N.
Long. 24° 46' E.

PORT MATALA.—The coasting craft trading with the Messara district generally anchor in a small cove 4½ miles northward of Cape Littinos, there being a more level road from it than from Kalo Limniones. It is called Port Matala, and although sheltered from the northward, is open to westerly winds, during which the vessels are hauled ashore upon a good beach. This was the other trading port of Gortyna, recognised by the ruins existing there, and by its still retaining the ancient name of Metala or Matala, given to it by the ancient authors; the shore cliffs also are perforated with tombs, some of which are below the level of the sea, and show a subsequent depression of the coast as at Spinalonga and Cape Sídoro.

The port is nearly 2 cables in length, by 1½ cables in breadth. A bank stretches off the beach at the head of the port, three-quarters of a cable; between the edge of the bank and the entrance, the depths are from 4 to 8 fathoms. There are two ruined houses close to the beach, and a landing place on the south side with steps cut in the rock. The cliffs on the south side of the port are about 42 feet, and those on the northern side about 150 feet high.

Anchorage.—There is good anchorage off Port Matala in 14 fathoms over fine sand, with the north entrance point bearing S. 75° E., distant 4 cables, the water shoaling gradually to the entrance.

Landing.—There is also a landing place on the north side of the point situated about two-thirds of a mile north of Port Matala, the road running up the face of the cliff at a steep incline.

Supplies.—Water may be procured at Messara river, or at Galines bay, the outlet of the Amaron valley, which runs at the western base of Psiloriti or Mount Ida, half across the island. Chart, 2,536a.
Var. 4° 45' W.

The Messara district produces a fine quality of wheat, and is capable of tenfold greater fertility and cultivation than at present. It is 25 miles long by 3 to 4 miles wide, dry in general, but with several rivulets intersecting it, and could be made the garden of Crete, as it no doubt was in ancient times, when Gortyna flourished as the capital of the island.

WINDS.—The swell from a sea breeze or westerly winds would, however, render communication with the shore of Messara bay often difficult, and the squalls from Psiloriti with northerly gales strike the bay with great violence. These are very frequent between the months of June and October, known by the native sailors of the Levant as the *Meltem* gale, their coming or continuance being always indicated by a fleecy bank of white clouds, which then envelopes the summit of Psiloriti and some of the neighbouring peaks.

In the winter these northerly gales are more violent, and the squalls more to be dreaded in consequence, and their effect upon the craft of St. Paul's day, which were only adapted for summer navigation, may thus be easily comprehended; hence the disabled condition of his ship upon encountering one of these gales after leaving Fair Havens, with the intention of wintering at Phœnice, about 40 miles to the westward of it.

The stormy wind, called Euroclydon in the Acts of the Apostles, and the Meltem* of the modern Greek navigator, seem therefore to be identical; for to the Levantine sailor, the Meltem is a tempest always to be guarded against, especially from its squalls when passing under any high land, which are often of great force. It is thus possible that its character, and not so much its direction, is meant by the word *Euroclydon* in the description of St. Paul's voyage by St. Luke; for in the Black sea and the northern parts of the Archipelago, the Meltem or northern gales are invariably N.N.E., but in the southern parts and Cretan seas they are from N.N.W., whilst in Egypt and Syria they are frequently between N.W. and N.N.W.

Kalo Limniones is a more tranquil anchorage with these gales than Messara bay, as in the former, a moderate and steady breeze is often blowing, whilst in Messara bay it is a strong gale, especially in the beginning of the day, just as St. Paul experienced in crossing it, and as was also experienced in H.M.S. *Spitfire* on one occasion when leaving Kalo Limniones for the western part of Crete; this circumstance, and experience first threw light on the true meaning and character of the Euroclydon of St. Luke.

The PAXIMADIA (biscuits) are two islets, lying before Messara bay. They are high, attaining an elevation of 1,160 feet, and together 2 miles in length east and west; surrounded by deep water, they present no difficulty to the navigation of the bay, but as there is no anchorage near them, they afford no shelter for an embayed vessel. They lie 8 miles north-westward of Cape Littinos, and 5½ miles southward of Kavo Melissa, the nearest part of Crete north of them.

PLAKA BAY.—The coast between Messara bay and Sphakia, about 22 miles westward of Kavo Melissa, has several indentations and bays at the mouths of precipitous valleys, and picturesque gorges, each with a small streamlet of good water flowing out of them to the

Lat. 35° 0' N.
Long. 24° 36' E.

Chart, No. 2,936a.

* The Turkish word *Meltem* is more usually applied to summer gales; and in the Bosphorus it bears a special name, according to the produce of the season, as Kabak Meltemi, Kirax Meltemi or Cherry Meltem.

Chart, 2,536a.
Var. 4° 50' W.

sea. Anchoring ground can be found off some of them, but that of Plaka and the bays east and west of Franko Castelli alone deserve notice, as being the most convenient, and also from having the best water. There is neither produce, nor object of interest sufficient to invite a trader or traveller upon this part of the coast, except its picturesque features; moreover the squalls which descend from the gorges with strong northerly gales, are very violent.

Franko Castelli is a ruined Venetian fort, on a low point of the coast, off which there is a long ledge of rocks forming a sort of natural mole. The rocks enclose a small sheet of water, with from 2 or 3 fathoms water within. Coasting craft use it in the summer season, and there is a local tradition that the Venetians intended to convert it into a safe port for winter use also, had they retained possession of the island.

Plan on 2,536a.
Lat. 35° 12' N.
Long. 24° 9' E.

SPHAKIA.—The coast town of Sphakia, the capital of a celebrated mountain district of Crete, stands on the western side of a sloping point 5 miles west of Franko Castelli, and about 3 miles east of the port of Lutro, which is its harbour. In summer, the coasting craft generally lie under Sphakia, at the mouth of a small cove, or are hauled ashore there, preferring it to the shelter of Port Lutro, in consequence of the inconvenience of communicating between it and Lutro by land across the several intermediate gorges and ridges; owing to which, it takes nearly 4 hours to cover the ground, although only three-quarters of an hour by sea when fine.

In 1905 H.M.S. *Minerva* anchored in 15 fathoms sand, and good holding ground, with the west end of the village bearing N. 10° E., and Kavó Muros, West.

Sphakia always enjoyed a certain amount of independence, and was formerly a town of some size, and possessed, previous to the Greek revolution, 15 square-rigged vessels, and a population of about 3,000, but it is now dwindled to a mere village of not more than 80 or 100 houses.

Plan on 217.

PORT LUTRO (ancient *Phœnix* or *Phœnice*), immediately under the highest part of Madara Vuna, is the only bay on the south coast where a vessel would be quite secure in winter. It bears about N.W. by W., 36 miles from Cape Littinos. The port is circular, open to the eastward, a little more than a cable deep, and about the same in breadth, with a rocky shoal extending nearly 1½ cables eastward from its south point, upon which is the islet of Lutro, sheltering the area on the north; although so limited, it is said that formerly 15 or 16 small square rigged vessels belonging to Sphakia, used to winter in it, with their sterns secured to the south shore of the port.

It is represented to be safe in winter, as the south winds seldom or never blow home against the lofty and precipitous mountains which rise above it and the swell which then reaches the shore is consequently merely a dead swell causing only motion to the vessels without strain to their ground tackle.

The head of the port has a narrow slip of shingle beach in front of a garden, and a few houses, the position of which seems to confirm the statement of the natives regarding the safety of the port; for one of the houses is built within 10 feet of the sea, and shows no indication that the swell ever reached its foundations, consequently no damaging sea can exist within the port.

The position of Lutro is best recognised from the sea by the town of Sphakia, the houses of which can be seen several miles off, being the

only town besides Hierápetra, standing immediately upon the south coast of Crete. The mountains also to the eastward of it, are less precipitous and elevated than to westward, for the bald steepes of the Madara Vuna commence their rise just over it.

Plan on 217.
Lat. 35° 11' N.
Long. 24° 4' E.
Var. 5° W.

Anchorage.—The winds most feared by the natives are the northerly gales of winter, during which the gusts descend from the mountains above with hurricane violence. A good cable is therefore necessary from the port bow of the vessel across to the rocks on the north shore of the port, as an anchor in the shallow water would come home. A good anchor and ground tackle also must be laid well out to the north-eastward, in not less than 15 or 20 fathoms water, where it would be in firm holding ground, and with a steep incline of the bottom to drag against. The stern-fast should also be secured to the quarter of the vessel, so as to allow her to swing off to all N.W. or N.E. gales, as this would greatly relieve the strain.

Pratique.—The Captain of the Port at Lutro is also the Health officer to Sphakia; Lutro and Hierápetra are, therefore, the only places on the south or west coast of Crete where a sanitary passport is officially recognised.

Water.—There are several wells at the head of the port, but the water is slightly saline or mineral, yet not unwholesome, as the natives frequently can drink no other, and have even recommended it medicinally, as an alterative, and for producing an appetite. There is, however, good water to be procured when there is no swell, from under a high cliff about 1½ miles west of the port, where, by simply digging a hole to the depth of a foot or two in the shingle beach under the precipice, a strong flow of water is met with, from which the vessels in the port always water when practicable.

GAVDO ISLAND.—This island is about 5½ miles in length, Chart, 2,536a. about 3 miles in average breadth, and 1,065 feet high; it is not very fertile, and contains a population of about 100 poor families, under the government of Sphakia. Gavdo is 20 miles southward of Cape Vatalos of Sphakia, and on its eastern side is a roadstead, where there is anchorage in from 10 to 20 fathoms water, on a bottom of sand and mud. There is anchorage also close off the south-eastern point of the island, to the eastward of Cape Tripiti, in 14 fathoms at 2 cables from shore, and this is preferable with northerly winds to the eastern roadstead, but not with westerly winds.

Cape Tripiti terminates the high cliffs forming the southern coast of Gavdo, and is remarkable for three natural arches perforated through its extremity, with a small valley on its east side. The north side of the island is low and shelving, and has shoal ground extending for 3 cables off all its points. There are also two detached rocks lying off the northern extreme; one nearly a mile distant, with less than 6 feet on it, the other with 14 feet water on it rather more than a mile from the shore, with deep water around them.

Chart, 2,836a.
Lat. 34° 47' N.
Long. 24° 7' E.

Chart, 2,536a.

Gavdo is the *Clauđa* of the ancients, and the *Gozo* of the middle age and modern navigators of the Levant. It has been dreaded by the mariner for its supposed outlying dangers, but the south shore is quite free, being bold and precipitous. No other danger than the rocks above described exist around it; nevertheless, the natives have a tradition that a shoal was known to their ancestors, which tradition may have sprung from a biblical source, since the deep soundings around give no indication of a rising of the bottom, to lead to the supposition of a submerged bank or quicksand having ever existed anywhere near it as a danger.

Chart, 2,536a.
Var. 5° W.

The island may, therefore, be boldly approached except at its north extreme, and the shelter of its lee, or the anchorage its roadstead affords, may be taken advantage of during a south-west or westerly gale.

LIGHT.—From a lighthouse on the western coast, bearing N. 65° W., 8 cables from the summit of Gavdo island, at an elevation of 1,149 feet above the sea, a *white fixed and flashing* light is exhibited, the *flashes* occurring *every minute*, visible in clear weather from a distance of 30 miles. The light was reported to be unreliable in 1900.

Gavdo Pulo, 3½ miles to the north-westward of Gavdo, is narrow, and upwards of 1½ miles in length N.W. and S.E. It is 440 feet high, steep-to, has no danger around it, nor anchorage, and is uninhabited; between it and the sunken rocks off the north end of Gavdo, the passage is clear of danger.

MADARA VUNA.—The coast west of Port Lutro (*see* page 244) is the most picturesque part of Crete; lofty crags and ridges descend almost abruptly to the sea from the bold and bald summits of the Madara Vuna or White mountains (ancient *Leuce*), their lower and middle zones being sprinkled with forests of fir and cypress. The growth of these trees is, however, stunted, and more adapted for fire-wood than timber; the ibex is found upon the mountains, and within the forests, in considerable numbers. The Madara Vuna rises to the height of about 8,100 feet, at 4 miles from the nearest part of the coast.

Temporary anchorages.—The bays, which exist at the mouth of every valley or gorge, between Port Lutro and Selino Kastelli, afford no anchorage for a sailing-vessel. A steam-vessel may, however, bring up, off some of them; namely, at Rumeli and Agios Kyrkos, 5½ and 14½ miles respectively westward of Port Lutro, at from 1½ to 2½ cables from the shore, but merely as a temporary anchorage in fine weather.

Lat. 35° 14' N.
Long. 23° 48' E.

Suia bay is in front of a valley about 2¼ miles north-eastward of Kavro Flomi, at the western base of the Madara Vuna; from Suia bay there is a road across to Khania, but there is no anchorage off it. In Agios Kyrkos, a bay about a mile to the west of it, there is anchorage. Both Suia and Agios Kyrkos were the sites of ancient towns, and had ports, but they are now within the shore.

SELINO KASTELLI is the next anchorage on this coast, at 4 miles westward of Kavro Flomi, the point westward of the bay of Agios Kyrkos. The anchorage is sheltered by a low point or plain, at the extremity of which is a flat eminence forming a small peninsula and surrounded by a cliff. At a few miles distant, the peninsula looks like an island, and indeed must have been one in historic times, as the coast has been here elevated upwards of 20 feet since the ancient authors described it. The walls of a modern fort 6 feet high, built by the Turks, on the ruins of a small Venetian fortress, stands on the northern part of the peninsula, and a rugged islet, about 40 feet high, lies close to its western point, with a shallow passage between. There is a small, conspicuous whitewashed chapel close north of the fort. On the peninsula, are several conspicuous look-out towers, with conical tops, about 14 feet high. Although an important coast station in the time of the Venetians, it has now only a few inhabited houses, situated on the northern part of the peninsula.

Anchorage.—There is anchorage on either side of the peninsula during summer, but the bay on the eastern side of it being sheltered from westerly winds, is preferable, although it has a deeper and steeper bottom than the bay on the western side. Chart, 2,536a.
Var. 5° W.

H.M.S. *Juno* in 1905 anchored in 16 fathoms in the east bay with the chapel bearing N. 32° W., and the left extreme of the peninsula S. 45° W.

A stream of good water issues from the adjacent valley through a line of plane trees and oleanders, and flows over a shingle beach to the sea just abreast of the eastern anchorage, which is in from 12 to 20 fathoms water, at 2 or 3 cables from the beach, and on a sandy bottom. The squalls with northerly gales are very violent here, in one of which, however, of great violence, H.M.S. *Spitfire* steamed in, and anchored to await its abatement, and rode securely for three days with two anchors ahead, and without starting either of them, although the bottom is steep.

The western bay affords a longer extent of clean sand and mud bottom, the holding ground is good, and the depth more convenient for anchoring; a small vessel may get well sheltered from west winds under the low rocky point of Trakhili, by anchoring off one or two huts on the west side of this bay, where there is also a stream of good water from the adjacent valley, sufficient to supply a fleet. For a vessel merely desiring shelter during strong northerly winds, the western bay of Selino Kastelli is the best to anchor in.*

H.M.S. *Juno* in 1905 anchored in 9 fathoms in the west bay with the chapel bearing N. 64° E. and the 40 feet rock S. 9° E.

CAPE KRIO is the headland forming the south-western extremity of Crete, and is $4\frac{1}{2}$ miles westward of Selino Kastelli. It was anciently called *Kriumetopon* or Ram's forehead, from its supposed resemblance to it; but although a somewhat bold termination of the western mountains of Crete, it is neither high nor remarkable as compared with other points and headlands. (See view on Chart, No. 2,536a.) Lat. 35° 13' N.
Long. 23° 35' E.

There is a small cove for coasting boats, called Port Krio, with a rocky islet off it, at 3 cables northward of the cape, which must be the port *Biennus* of the anonymous Periplus; but the recent elevation of the coast has much reduced its ancient limits and accommodation.

ELAPHONISI, or Stag islet, is a long flat island, lying $3\frac{1}{2}$ miles north-westward of Cape Krio, but with merely a boat-channel 2 or 3 feet deep, between it and the shore. Its western extremity is its highest part, where it is also bold; but on the south side of the island, there are dangerous rocky patches extending off it in that direction to, and around Low islet, at a distance of nearly three-quarters of a mile.

LIGHT.—It is proposed shortly to establish on Elaphonisi a *white fixed* and *group flashing* light showing two flashes *every ten seconds*, and visible in clear weather from a distance of 15 miles.

Anchorage.—The water at the head of the bay to the east of Low islet is deep, and does not afford very commodious anchorage; but a few steamers could obtain convenient anchorage during a northerly gale in from 8 to 12 fathoms water, at 2 cables from the shore, and upon a bottom of sand.

The limited anchorage ground is off a ravine descending from some remarkable white patches on the side of the mountains above, and with

Chart, No. 2,896a.

* The depths in the western bay were reported in 1893 to be less than shown on the chart.

Chart, 2,536a.
Var. 5° W.

Cape Krio bearing about S.E. This anchorage was found preferable with northerly gales to that of Selino Kastelli, for temporary shelter, in consequence of being under comparatively low land, and therefore not subject to the violent squalls which are experienced at Selino Kastelli, and along the south coast with such winds; but the anchoring ground, as before remarked, is limited, the ground to the westward of it being uneven and foul, and to the east of it under the high land, much too deep.

Plan on 217.
Lat. 35° 30' N.
Long. 23° 33' E.

CAPE KUTRI.—The bay and cultivated plain of Akti, 14 miles north of Elaphonisi, about two-thirds along the western coast of Crete from the south, is between two high ranges of hills. At the northern extremity of the bay, is Cape Kutri, bluff and cliffy, off which to the south-westward is the rugged islet of Petalides; a reef of rocks named Kutri reef, extends 3 cables from the islet in the same direction, but is separated from it by a very narrow 12 fathoms channel.

The northern end of Petalides islet is separated from the south extreme of Cape Kutri, by a passage 1½ cables wide leading into Akti bay, but it is further contracted by rocky ground extending from either side, and can only be used by small vessels.

Within Cape Kutri, are some remains of the ancient town of *Phalasarna*; it was the western port of the neighbouring city of *Polyrhénia*, and had an artificial harbour, but which is now inland, through an upheaval of the coast in historic times; it has no inhabitants.

Anchorage.—There is anchorage within the islet and reef of Petalides, with northerly winds, but the ground is chiefly rocky, with sandy patches between all depths under 12 fathoms. It might, however, be found sometimes more convenient for a sailing vessel or steamer to anchor here than to run entirely to leeward of the island, on meeting a strong north-easterly gale at this entrance of the Archipelago, particularly as a sailing-vessel would find it difficult to gain the anchorage of Selino Kastelli, if the gale was very violent, on account of the heavy gusts and squalls preventing canvas from being set.

Pondiko nisi, Grabusa harbour and the Korykos promontory, of which latter, Cape Kutri, forms the southern end, have already been described on page 218.

Chart. No. 2,336a.

CHAPTER VIII.

THE CYCLADES, OR WESTERNMOST OF THE SOUTHERN
ISLANDS OF THE ARCHIPELAGO.

THE CYCLADES, so named from their surrounding Delos, Chart, 2,836a the birthplace of Artemis (Diana) and Apollo, are those islands of the Archipelago belonging to the kingdom of Greece. The principal islands commencing on the south-west, are Milo, Siphano, Serpho, Thermia, Zea, Syra, Jura, Andros, Tinos, Mykoni, Paros, Antiparos, Naxos, Amorgos, Nio, Polykandro, Sikinos, Santorin, Anaphi, &c. Zea and a portion of Andros are described in Chapter III. and the remainder of the above islands in this.

Ananes islets.—Situated 9 miles S.W. by W. $\frac{3}{4}$ W. from Paximadion islet at the south-western end of Milo, is a cluster of small rocky islets, the highest of which, named Ananes, is sharp pointed and about 150 feet high; they can be seen at some distance, and when bearing E. by S. $\frac{1}{2}$ S. distant 7 miles, appear as seven islets. It would be well not to approach them too closely. Lat. 36° 33' N.
Long. 24° 0' E.
Var. 4° 45' W.

MILO (MILOS) ISLAND, the south-western of the group, is Chart, 2,051. of volcanic formation, mountainous, and about 10 $\frac{1}{2}$ miles in length east and west. The eastern and western portions are about 6 miles in breadth, but its width in the centre is reduced to one mile by a bay which runs in on the north-west side. Near its south-west end, Mount Elias, the summit of which commands extensive views of the islands of the Archipelago and the mountains of Crete, rises 2,538 feet above the sea. Although the surface of the island is generally rugged and mountainous, with a naked and sterile appearance, the valleys and low grounds are extremely fertile, producing corn, cotton, oil, wine, oranges, and other fruit in abundance, as well as pasture for cattle.

Volcanic agency is still active, as shown by its hot springs and mines of sulphur and alum; the hottest of these springs is on the beach at the head of the large inlet or bay, and about three-quarters of a mile from the old town Paleo Khori, the ground around being impregnated with sulphur. In the side of a little rocky height above, is another in a natural cave known as the Bath, which is frequented by persons afflicted with scrofulous diseases. To the southward of the height, the land is low and marshy with salt pans, which cause malaria.

Trade.—In 1906, the exports were valued at 24,324*l*, and included 8,850 tons of manganese, 1,200 tons of sulphur, 6,800 millstones, and 35 tons of gypsum; the imports consisted only of daily necessaries.

In 1907 in addition to the local mail steamers, the island was visited by 4 steamers, 3 of which were British.

Port Milo.—On the north-western side of the island, is a large inlet extending 5 miles to the south-east, having a breadth of one mile between the town of Kastro and Kalamaria point, and widening to

Chart, 2,051.
Var. 4° 45' W.

2 miles at its head, with generally high bold shores, and deep water throughout. The bay affords accommodation for a large number of vessels, and is much frequented by those bound to Constantinople, Smyrna, and elsewhere, when unable to proceed during northerly or north-easterly gales.

Akrathi islets.—Two-thirds of a mile north-westward from Lakida point, the north-eastern entrance point of Port Milo, are the two rocky islets of Akrathi nearly united, with a deep and clear passage between them and the point.

LIGHT.—A *red fixed* light is shown at an elevation of 253 feet from a square masonry tower, 23 feet high on the north-west point of the western Akrathi island; it should be visible in clear weather from a distance of 16 miles

Monopodro rock, a remarkably bold rock 15 feet high, lies 2 cables off the point next southward of Lakida point, and bears from the latter S.W. by S., distant half a mile.

Bombarda point.—At $3\frac{1}{4}$ miles, within the entrance on the north-eastern side, is Bombarda point, a bluff headland, and half a mile eastward of it, is the village or Skala of Adamandos, which in 1896 contained 673 inhabitants.

A white pyramidal monument, in memory of those who fell in the Crimean war, is situated 2 cables to the north-westward of the light-house.

LIGHT.—A *green fixed* light is exhibited on Bombarda point, from an iron mast attached to an iron building. The light is elevated 134 feet above the sea, and 20 feet above the ground, and should be visible in clear weather from a distance of 4 miles, from the bearing of S. 35° E. through east to N. 35° W.

Anchorage.—Vessels may anchor in any convenient berth, in from 10 to 25 fathoms, mud; the farther out the better holding ground, and a sailing-vessel will more readily get to sea in the event of a southerly wind. The bluff points of Bombarda and Kalamaria in line with the summit of Anti Milo N.W. by W. $\frac{1}{4}$ W., and the village N. by W. $\frac{1}{4}$ W., will be a fair berth for a large vessel. The water shoals rapidly, and if the anchor is in 20 fathoms, the vessel's stern when swung inshore with a good scope of cable out, will be in about 12 fathoms; the holding ground is good. The squalls off the southern shore are at times heavy.

In the approach to the bay, Milo island on some bearings from a distance, appears like two peaked hills. Anti Milo being high, round, and conspicuous, is an excellent distant mark.

Kastro.—The town or large village of Kastro stands on a rocky elevation on the north-eastern side near the entrance to Milo bay, and is the seat of the local government; combined with Tripiti and Plakis close to it on the south-east and east, it contains the greatest portion of the inhabitants of the island, who in 1907 amounted to 5,393, mostly fishermen and sailors, who formerly were reputed the best pilots in the Archipelago.

Supplies.—Small quantities of provisions may be obtained, but very little water.

Communication.—There is weekly communication by steamer with Syra, and thence with the rest of the world. Kastro is a telegraph station.

Consul.—A British Consular Agent resides here.

Lat. 36° 45' N.
Long. 24° 26' E.

Anti Milo (Antímilos) island is rather more than 2 miles in extent north and south, and $1\frac{1}{2}$ miles east and west, somewhat triangular in shape with its pointed end to the south. It is 2,250 feet high, rugged, steep all round, and uninhabited except by a few wild goats. Vlykadion point, its south end, is nearly 5 miles from the nearest part of Milo, and bears W. by N. $\frac{3}{4}$ N. from Cape Vani, a high hill of craggy rocks, and the western entrance point of Milo bay.

Chart, 2,061.
Lat. $36^{\circ} 47' N.$
Long. $24^{\circ} 15' E.$
Var. $4^{\circ} 45' W.$

From the northward, Anti Milo is easily distinguished at a great distance by its rounded form, and appears considerably higher than Milo. The channel between it and Milo is deep and clear, but sailing-vessels should avoid the calms and sudden gusts of winds, by not passing too close to the shore on either side.

Paximadion islet, off Psalis point, the south-western end of Milo, is surrounded by rocks, and should be given a wide berth. The channel between the islet and Psalis point, is two-thirds of a mile wide, and clear of danger if a mid-channel course be maintained.

Zephyr rock.—At 7 miles eastward of Psalis point, is Zephyros point, from which shallow water extends 4 cables to the southward with 4 and 5 fathoms water on it; at the extremity of the shoal is a dangerous sunken rock with less than 6 feet water over it named Zephyr, with deep water close to it. The south-eastern extreme of Polino island in line with Steli point bearing N. $58^{\circ} E.$, leads well southward of the rock.

Steli point, the south-eastern extreme of Milo, is the termination of a narrow projecting tongue of land with a large rock at its extremity, and shallow water $1\frac{1}{2}$ cables southward of it.

Lat. $36^{\circ} 40' N.$
Long. $24^{\circ} 32' E.$

Ktenia rocks.—Nearly $3\frac{2}{10}$ miles S.E. from Steli point, are two isolated rocks above water, and steep-to, named Ktenia or the Pigeons. Caution is necessary when in their vicinity at night.

KIMOLOS or ARGENTIERA ISLAND (named Kimolos by the Greeks, and Argientiera by the Romans, from silver mines which formerly existed), is $4\frac{1}{2}$ miles in length north and south, by $3\frac{1}{2}$ miles in breadth, 1,305 feet high, with irregular and generally rocky shores. In 1907 it contained 2,015 inhabitants, and the only town or village called Kimolos, is on its south-eastern side. The ancient town was at Liniko on the south-western coast, where St. Andrea islet, now about a cable from the shore, was formerly united to the coast and formed a small harbour; the islet has still remains of houses on it. The barren soil affords but little sustenance for the inhabitants, who mostly lead a seafaring life. 1,700 tons of iron ore were shipped from this island in 1898; a considerable quantity of building stone is also exported.

Poloni pass.—Kimolos is separated from Milo, by a passage half a mile wide, bordered on either side by shallow water, especially at the southern end of Kimolos, where the shoal, on which the sea at times breaks, extends more than half-way across; leaving a channel 7 fathoms deep, and a cable wide, called Poloni pass.

Poloni rock.—The shallow rocky ground which extends southward from the south point of Kimolos, borders the coast of the island eastward at the distance of a third of a mile; and beyond this distance, at the eastern entrance to Poloni pass, is the rock of the same name with $4\frac{1}{2}$ fathoms water on it, and 6 fathoms between it and the rocky ground bordering the coast of Kimolos.

Chart, 2,051.
Var. $4^{\circ} 45'$ W.

St. Georgio islet.—St. Georgio is a narrow irregularly formed islet about half a mile in length north and south, with rocks above water close to its south-western end. At a third of a mile westward of its northern end, is a rock above water with shoal ground extending from it 3 cables south-westward; between the rock and islet, there are from 6 to 10 fathoms water. St. Georgio islet and the rock westward of it, occupy a position nearly equi-distant from Milo, Kimolos, and Polino, and the water is deep in mid-channel all round.

Pyrgui (St. Eustache) islet, about 3 cables in extent, lies 7 cables northward of St. Georgio, having a narrow passage between it and Kimolos; the islet has a narrow bank all round it.

Lat. $36^{\circ} 46'$ N.
Long. $24^{\circ} 35'$ E.

LIGHT.—A *red fixed* light is shown at an elevation of 85 feet from a square stone tower, 23 feet high, on the north extreme of Pyrgui islet; it is visible in clear weather from a distance of 5 miles from the bearing of N. 6° E. through north to S. 84° E.

Temporary anchorages.—In case of necessity during northerly winds, vessels might find temporary anchorage southward of Kimolos, with the above islets on the east, and Milo on the west; also, with westerly winds, off the village of Kimolos.

POLINO (POLYAIGOS) was called also Isola Brusiata or Burnt island, from its great sterility. Cattle rearing is the principal occupation of the inhabitants, who only numbered 23 in 1896. It is $3\frac{1}{4}$ miles in length north-west and south-east, and 1,170 feet high; its coast, generally bold, is irregular, forming two or three little coves, with rocks above and below water here and there, and from a little islet on the west side sunken rocks extend off a cable.

Maskula point, with an islet off it, is a slight projection on the north-east side of Polino island.

LIGHT.—A *white flashing* light *every five seconds* is shown at an elevation of 408 feet from a circular masonry tower, 28 feet high, near Maskula point; it is visible in clear weather from a distance of 18 miles, but is obscured when bearing north of N. 18° W.

Pyrgui strait.—Polino is separated from Kimolos by a channel nearly 9 cables wide, clear and deep, and called Pyrgui strait. In the navigation around and amongst these islands, the chart and the eye are the best guides.

Plan on 1,817.
Lat. $36^{\circ} 58'$ N.
Long. $24^{\circ} 42'$ E.

SIPHANO (SIPHENOS) ISLAND is $9\frac{1}{2}$ miles in length, with an extreme breadth, at the southern end, of $4\frac{1}{2}$ miles, whence it tapers to Cape Phillippo (Kherisónisos) its north-west extremity. A range of mountains extends throughout, and Mount St. Elias, distinguished by a chapel on its summit, near the centre of the island, is 2,280 feet above the sea. Siphano is famous for the salubrity of its climate and the fertility of its soil, and produces corn, wine, oil, silk, poultry, fruit, &c.; straw hats of a rough manufacture are exported, and a considerable trade is done in cattle and pottery. The inhabitants in 1907 amounted to 3,777; they are quiet, civil, hospitable, and industrious, worthy of their picturesque, fertile island and delightful climate.

In ancient times, Siphano was celebrated for its mines of gold and iron; the latter are on the north-eastern side of the island, with a narrow, low entrance at the foot of a cliff, cut into the solid rock; the marks of the miners' tools were as fresh in 1844 as if only then done.

The mines may be entered by each person bearing a torch, but after advancing a considerable distance, the explorers are stopped by the accumulation of rubbish. The smelting furnaces are cut out of the solid marble rock on the point shelving to the sea, and either by the sinking of the land, or rising of the sea, are now many of them under water, some quite submerged and others only partially so, and surrounded by the scoræ of former days.*

Plan on 1,817.
Var. 4° 45' W

A group of villages, numerous for the size of the island, stand on a kind of elevated plateau towards the east, 890 feet above the sea; they are clean and exceedingly healthy, and present a most imposing appearance from seaward. The land around them is well cultivated, extremely fruitful, and abounding in springs of excellent water. The northern village of the group is the capital, or residence of the local authorities, is known by the name of Appolonia, and in 1896 had a population of 827. Several square windmills with fixed leads facing the north, from which quarter the wind generally blows, are erected on the ridge of land on which the town stands.

Communication.—There is weekly connection by steamer with Syra and Peiræus. Siphano island is in telegraphic communication with the rest of the civilised world, the town of Kastro being the telegraph station.

Water for shipping is not to be procured on the island, but live stock is plentiful.

Anchorage.—The island has no good ports; anchorage may be obtained by small vessels inside Kitriani islet, in 15 fathoms, but the holding ground is indifferent, and at Port Pharos in better holding ground. Vessels may anchor in Platialos (Platys Yalos) bay with a northerly wind, if not blowing too hard; but the squalls off the high land are so heavy as to render it impossible to contend against them under sail.

Coasting vessels, in summer, anchor close under Kastro point where there is an old dilapidated town, with a population in 1896 of 328 and some remains of an ancient castle. Port Vathy, on the south-western part of the island, is fit only for boats, the holding ground being bad, except close in shore.

Kamares bay, open to the westward, is situated on the west side of Siphano island and 3 miles southward of Cape Phillippo, the north extremity.

Lat. 36° 54' N.
Long. 24° 44' E

There are two or three other bays on the north-western coast, but they are open and exposed.

LIGHT.—A *red fixed* light is shown at an elevation of 160 feet from a column over a dwelling, 16 feet high, on the south side of Kamares bay; it should be visible in clear weather from a distance of 6 miles.

Kitriani island, off the south-east coast of Siphano island, is 340 feet high, nearly a mile long north-east and south-west, and half a mile wide. It is separated from Siphano by a channel 2 cables wide with depths of from 5 to 20 fathoms, the only danger being a rock close off the west point of Kitriani.

Dangers.—The only outside dangers to be avoided, are a rock which dries 3 feet, lying 4 cables N.W. $\frac{3}{4}$ N. from Cape Phillippo, the northern extreme of the island; and another rock with 4 fathoms water on it, situated 4 cables S.E. from the south-west end of Kitriani islet.

Chart, No. 2,836a.

* Pausanias relates that in consequence of the Siphnians neglecting to send the tithe of their treasure to Delphi, the god destroyed their mines by an inundation of the sea.

Plan on 1,817.
Var. 4° 45' W.

The passage between Siphano and Kimolos is $6\frac{1}{2}$ miles wide, and with the exception of the 4-fathoms rock just mentioned, is clear and deep.

Siphano channel.—The passage between the sunken rock off the northern end of Siphano island and Serpho to the north-west, is $6\frac{1}{2}$ miles wide, and, with the exception of the rock off Cape Phillippo, is clear of danger.

SERPHO (SERIPHOS) ISLAND, the next northward of Siphano, is nearly circular, about $5\frac{1}{2}$ miles in diameter, and attains an elevation of 1,585 feet above the sea. It is generally sterile, but produces a little corn, wine, and a small kind of onion. There are traces of ancient mines on the south-western part of the island, and lode-stone is still to be procured; there are also the remains of a tower of white marble. Sériphos, the largest village in the island, stands on a curious conical hill, about three-quarters of a mile from the head of port Livadhi. The whole population of the island in 1907 amounted to 4,024.

Light.—A *white group flashing light*, showing *groups of four flashes* in quick succession *every ten seconds*, elevated 212 feet above the sea, and visible in clear weather from a distance of 20 miles from the bearing of S. 63° W., through west, to N. 80° E., is exhibited from a square tower, 32 feet high, erected on Point Spathi, the south-east point of Serpho island.

Lat. 37° 8' N.
Long. 24° 32' E.

Port Livadhi (Livádion), on the south-east side of the island, extends northward about $1\frac{1}{4}$ miles and is nearly a third of a mile wide. The water is rather deep, but at the head of the port, the anchorage, in from 12 to 8 fathoms, sand and weed, is good in any weather; on the western side of entrance is a small reef awash, close inshore. In a sailing-vessel access is difficult except with a fair wind. In entering keep in mid-channel, give the inner point on the west, which is low with a chapel on it, a berth of a cable, and anchor where convenient.

The population of the port was 580 in 1896.

During part of the summer, the heat in the port is excessive; surrounded as it is by an amphitheatre of rocky hills which hardly cool, the heat is nearly the same at all hours, and for days the thermometer may register 98° at 10 h. p.m.

A cargo of 2,300 tons of iron ore, has been loaded in four days. The loading berth has a minimum depth of 21 feet, mud bottom, and the remainder of the port has ample and safe anchorage space for three or four steamers.

There are several other inlets round the island, but none of them useful as anchorages.

Water.—A little water may be procured from the wells on the low ground, at the head of Port Livadhi.

Trade.—131,925 tons of iron ore valued at 43,975*l*, were exported in 1905. In the same year 38 steam vessels of 61,480 tons, called for iron ore; of these 14 vessels of 21,770 tons were British.

Consul.—A British Consular Agent resides at port Livadhi.

Communication.—There is weekly steamboat connection with Peiræus, Syra, and the adjacent islands. Port Livadhi is also a telegraph station.

Dangers.—The little islet of Mikro lies close to the south point of the island; nearly midway between it and the eastern point of Kutala bay, is a rock with less than 6 feet water over it, with deep water round

it, and difficult to be seen on account of the colour of the bottom. To avoid it, keep well outside the line of the islet and point. To Plan on 1,817.
Var. 4° 45' W

Another shoal, with less than 6 feet water on it, lies nearly a quarter of a mile from the north horn (a bluff 400 feet high) of Psarometokhion bay, on the north-west coast. With the above exceptions, there are no off-lying dangers round the island.

Vus islet is small, about a quarter of a mile in diameter, 435 feet high, bold with deep water near it, lying E.N.E. from Amyno point, the north-east entrance point of port Livadhi, and one mile from the coast.

Seriphópulon, lies $4\frac{1}{2}$ miles north-eastward of Serpho; this islet is $1\frac{1}{2}$ miles in length east and west, half a mile in maximum breadth, tapering to each end, and forming a curve northward, with steep cliffs on the south; it is about 650 feet high, bold, and clear of danger.

Serpho channel.—The passage between Serpho and Thermia on the north, is $7\frac{1}{2}$ miles wide in its narrowest part, and called Serpho channel. The islet of Piperi lies between the eastern ends of the two islands, and 4 miles north-westward of Seriphópulon. Piperi is 4 cables in diameter, inaccessible, with deep water round it, and the currents are strong in its vicinity.

THERMIA (KYTHNOS) ISLAND is irregularly formed, Lat. 37° 24' N.
Long. 24° 24' E $11\frac{1}{2}$ miles in length north and south, with an extreme breadth of about 4 miles; the highest of its hills near the centre of the island is 965 feet above the sea, and its coast line is indented with several little ports and coves. The island derives its modern name from the hot baths at its north-eastern part, and which are said to be of great efficacy in all scrofulous and rheumatic complaints, and many invalids resort hither in the summer from Greece and Turkey, but the accommodation is very indifferent. The population of the island in 1907 was 3,191.

There are only two towns or villages in the island; the modern capital, Kythnos, is about $1\frac{1}{2}$ miles southward from Port Irene, and contained in 1896 1,967 inhabitants. At $1\frac{1}{2}$ miles southward of Kythnos (sometimes called Messaria), and not far from the greatest elevation, is the village of Sillacca or Dryopis, containing a population of 2,386 in the year 1896. Here is a large grotto; a few veins of marble and chalk intersect the rock and form stalactites.

The ancient city (*Kythnos*) stood on the west coast, over a cliff about 600 feet above the sea, and between the ports of Apokrusis and Piskopi. The solitary grandeur, magnitude, and solidity of the masonry of the ruins attest its former magnificence; the ruins have acquired among the islanders the name of Hebræo Kastro or Jews' castle, a name applied in contempt by Greek peasants to any ancient building erected by strangers.

Trade.—The island produces barley, corn, wax, wine, and honey in addition to which, 30,750 tons of iron ore were shipped in 1907; it abounds in red-legged partridges, and there are also sheep, goats, and pigs.

Shipping.—In 1907 the island was visited by 9 steamers, of which 6 were British.

Communication.—There is connection by steamer twice a week, with Peiræus and Syra, and once a week with the island of Amorgo and others of the Cyclades. Sillacca or Dryopis is a telegraph station.

Port Merika, on the western side of Thermia, is a narrow inlet about $5\frac{1}{2}$ cables deep, open to the north-west, with a rock above water

Plan on 1,817.
Lat. 37° 24' N.
Long. 24° 24' E.
Var. 4° 50' W.

lying a cable off its south point of entrance. Inside, the shelter is good, but a vessel under sail experiences difficulty in leaving except with a fair wind.

Port Irene, is on the east coast, $2\frac{1}{4}$ miles from Cape Képhalos, the northern extreme of the island. A large building, in which are the hot baths, is easily distinguished, and when it bears W. by S. should be steered for. The only danger is a rocky patch with 3 feet water over it, on the northern side of entrance; it can, however, always be seen and avoided. The best anchorage is in a little creek on the south-east side of the port, where small coasters lie in safety.

The hot baths, about 200 yards from the beach at the head of the port, are extensive, but much out of repair. The waters vary in temperature, the hottest being 131°; they are brackish and disagreeable to the taste, but clear; by overflowing, they cover the ground to the sea with a porous crust, here and there of a reddish colour from the iron, which with salt are their principal ingredients.

Light.—A *red fixed* light is shown from an elevation of 51 feet from a metal support 26 feet high at the bathing place on the southern entrance point to Port Irene; it should be visible in clear weather from a distance of 5 miles.

Port St. Stéphanos.—At nearly $5\frac{1}{2}$ miles south-south-eastward of Cape Képhalos, is Cape St. John, the eastern extreme of the island; and about a mile south-westward of the latter, is the entrance to Port St. Stéphanos. The port extends in a little more than three-quarters of a mile, and is about the same distance in breadth; a projection from the head of the port, forms an inlet on either side of it. A sunken rock lies nearly a cable off the south-eastern extreme of this projection, and a small shoal with 3 feet water on it, which can always be seen, lies $1\frac{3}{4}$ cables off the southern entrance point of the port. The port is open to the southward, and the water is deep in the outer part, but near its head there are from 5 to 20 fathoms. It is available for anchorage, but as there is nothing to be obtained, it is seldom visited.

There are several small bays on the western side of the island, but useless as anchorages. The coast all round is clear of off-lying dangers.

Chart, 1,657.

Thermia channel between Thermia and Zea islands, is a little more than 6 miles wide, clear and deep. The current in this channel, runs to the south-west with much strength, and stronger than between Zea and Makronisi, although close inshore along the south-eastern side of Zea it sets to the north-eastward. (For Zea island, *see* page 64.)

Chart, 1,542.
Lat. 37° 27' N.
Long. 24° 56' E.

SYRA (SYROS) ISLAND, is irregular in shape, $9\frac{1}{4}$ miles in length north and south, with an extreme breadth at the southern end, of $5\frac{3}{4}$ miles. It is hilly, the two greatest elevations being Mount Nites rising over the south coast, and Mount Pyrgo 1,415 feet high, about 4 miles from the northern end; the hills are chiefly formed of mica-slate, though near the sea there is marble of an inferior quality. The island is well cultivated, and produces barley, cotton, figs, olives, wheat, wine, &c. A large quantity of vegetables are sent to Athens and Constantinople in the early season. The population of the island, according to census taken in 1907, was 27,350.

The ancient Greek city stood on the site of the present capital town of Syra or Hermopolis on the shore of Syra harbour on the eastern side of the island. In the middle ages, the inhabitants retreated for security from the pirates who then infested the Archipelago, and

built another town on the summit of the steep peaked hill in the rear, now called Old Syra. The island was of no importance till the war of the revolution, when a great influx of refugees from different parts of Greece and the islands, especially from Khios and Psara, occurred; on the site of the ancient city, the modern town gradually rose to its present flourishing condition, and being in a central position, is the emporium of the Archipelago, and its harbour a port of call for shipping, more especially steam-vessels of nearly all nations, and from all parts.

Coast.—The coast line of Syra is sinuous, forming numerous bays and coves, but they are all open and exposed. It is generally bold, with but few off-lying dangers.

Grammata head on the west coast and one mile southward from Cape Trimeson, the northern extremity, is conspicuous to a vessel approaching Syra from the westward. This perpendicular rocky precipice stands out conspicuously from the background in the shape of a bell, and is of a light yellow colour.

Chart, 1,542.
Var. 4° 45' W.
Lat. 37° 30' N.
Long. 24° 53' E.

Delphini rock, with 2 fathoms water on it, and steep-to, lies off the west coast, one-third of a mile north-westward of the south point of Delphini bay. The east side of Barbarusa islet in line with the north extreme of Trakhyta head bearing N. 23° E., leads on the rock; the islet should therefore be kept well open.

Trypa rock, with 1½ fathoms on it, is the summit of a shoal nearly 2 cables in extent north-west and south-east, lying S.S.W. 4½ cables from Phokia point, the east extreme of Syra island; the shoal is steep-to. Cape Vilostasi (Vilostasion) the south extreme of the island, S. 76° W., open of Xodra head, leads southward of the shoal; the whole of Gaidaro island, open of Phokia point, N. 6° W., or the land to the northward in line with the west end of Gaidaro island N. 11° W., lead eastward of it.

Aspro islet, a quarter of a mile in length, somewhat triangular in form, steep at the southern end, and sloping towards the north, lies a mile south-eastward from Phokia point. The water is deep off its southern end, but a tongue of shallow rocky ground extends 3 cables in a N.W. by N. ½ N. direction from the west point of the islet, having near its extremity, a rock awash. Another rocky ledge extends 1½ cables to the north-eastward of the islet, and outside this ledge at 2½ cables from the islet, is a shoal patch with a least depth of 3¾ fathoms falling suddenly to deep water.

Vessels passing Aspro islet, should give it a wide berth. The passage between the north-west tongue and the shallow water around Phokia point, is two-thirds of a mile wide, and the distance between the tongue and Trypa shoal, three-quarters of a mile. The passage between Aspro and Syra may be safely used by keeping the western end of Gaidaro just open of Phokia point, or the north-eastern extreme of Syra touching the west end of Gaidaro.

Buoy.—A red whistle-buoy is moored in a depth of 4 fathoms on the shoal extending to the north-eastward of Aspro islet, but it is not to be relied upon.

Gaidaro island.—This island is two-thirds of a mile in length, a third of a mile in breadth, and about 97 feet high. It lies S.E. by E. ½ E. 1¼ miles from the extremity of Syra mole, and affords some shelter to the anchorage when the wind is from that quarter.

A rock nearly awash, lies a quarter of a cable off the north point of the island.

Chart, 1,542.
Lat. 37° 26' N.
Long. 24° 57' E.
Var. 4° 45' W.

Anchorage.—The distance of Gaidaro island from the shore south-west of it, is about half a mile, and the space between affords tolerably good anchorage in from 12 to 18 fathoms water, coarse sand, and shells with patches of weeds, sheltered from north-easterly winds, which at times blow strong. On a fine day when the water is smooth, the anchor may be seen in 12 or 13 fathoms. There is a good summer anchorage, but open from South to East. An islet lies close to the eastern side of Gaidaro, with 3 fathoms water between.

Lat. 37° 25' N.
Long. 24° 59' E.

LIGHT.—On the western summit of Gaidaro, is a circular stone tower, 97 feet high, from which is exhibited at 224 feet above the sea, a *white fixed and flashing light*, the flashes occurring *every two minutes*, thus:—*faint light, ninety seconds; eclipse, ten and a half seconds; bright flash, nine seconds; eclipse, ten and a half seconds*; visible in clear weather from a distance of 17 miles. The light is sometimes seen over Phokia point.

Plan on 1,542.

Syra or Hermopolis town in 1907 contained 18,132 inhabitants, nearly all engaged in mercantile pursuits; a quay with numerous warehouses and handsome houses of white marble attest its mercantile importance. In a handsome square in the centre of the town, is the town-hall and other public offices. There is an Italian opera, and a Greek theatre, and though the streets are narrow and crooked, they are well paved, lighted, and clean. Old Syra, practically connected by buildings with Hermopolis, is perched on the remarkable conical hill which commands the port; the ascent is rather toilsome, and on the summit is the church of St. George, from which is an extensive view. Old Syra contained 3,272 inhabitants in 1896, mostly Roman Catholics, the descendants of the Genoese and Venetian settlers.

The new city of late years has grown back and upward to a second hill, which, with Old Syra, present from the mouth of the harbour the appearance of two distinct conical hills covered with white houses, each hill being crowned with a church.

There is an Anglican church, divine service being held at 10h. 30m. a.m. on Sundays, excepting in June, July, and August, when most of the congregation reside in the interior of the island. It is the principal seat of missionaries for the Levant, who have schools here. There is likewise a British burial-ground.

A British Consul resides here, also Consul or Consular Agents for nearly all nations.

The climate of Syra is remarkably healthy, extreme cold or frost being unknown, snow falling once or twice in three or four years and melting immediately. In summer, it is occasionally sultry in calms, or with south or south-west winds, and in the lower part of the town which is built and paved with crystalline limestone, it is then disagreeably hot. The prevailing wind, however, is from the north, and blows throughout the summer, with occasional lulls or changes to the south, keeping the air cool, especially in the more elevated parts of the town. It rarely rains, except in the winter, and the springs of the town being insufficient for supplying water, it is collected from the roofs and terraces of the houses into cisterns, of which every house has one. This water is used for drinking by the inhabitants, who prefer it, as it is soft and good.

SYRA HARBOUR, the only port for shipping, is on the eastern side of the island, where the coast forms a bay open to the eastward.

On the north side of the bay, a small peninsula, formerly an islet, projecting southward and prolonged by a mole 820 feet in length, covering an area about $3\frac{1}{2}$ cables deep, with depths of from 10 to $3\frac{1}{2}$ fathoms, good holding ground, affords excellent shelter. The mole is being extended to about 1,300 feet, the works being marked by buoys. Vessels should give the visible end of the breakwater a berth of at least 150 yards.

Plan on 1,542.
Lat. $37^{\circ} 26' N$.
Long. $24^{\circ} 57' E$.
Var. $4^{\circ} 45' W$

A channel, 330 feet long and 28 feet deep, leading to the patent slip, has been dredged.

The bay is bordered all round by a narrow bank, which in the southern part is rocky and extends 2 cables from the shore; its edge in a depth of 3 fathoms north-west of the New Lazaretto, is marked by a cylindrical stone beacon 13 feet above the sea, with three horizontal red bands.

Steamers of 20 feet draught lie safely at the head of the harbour, with sterns secured to bollards on the quay. Larger vessels lie farther out with their sterns fast to bollards on the mole.

To avoid impeding the navigation of the harbour, and for the benefit of fresh and cool air, it is advisable for men-of-war to secure their sterns to the east mole after anchoring. This should not be too much relied on in a heavy blow, as the mole is only 3 feet above the water, and being built of loose blocks of stone, does not offer a very solid foundation. Battleships that have anchored here, have laid out anchors over the mole so as to grasp the sea face. A vessel may haul her stern close to the mole, there being deep water within 20 feet of it.

Pilots.—On arriving outside the harbour, the vessel is boarded by a pilot, who points out, and in the case of a merchant ship, pilots them to a berth.

LIGHTS.—Two *red fixed* lights placed vertically on an iron mast, at elevations of 39 and 34 feet, are shown from the old head of the east mole, and are visible in clear weather from N. 6° W. through west to S. 19° E., from a distance of about 5 miles. These lights are reported to show *white* in the anchorage off the Custom-house.

Outer anchorage.—A large ship requiring coal and not wishing to go inside should go into 10 fathoms water, sandy bottom, and moor with the New Lazaretto point bearing S. 10° W., and the mill on the beach S. 84° W. With a northerly wind and farther out, the coal-lighters will not generally be able to remain alongside.

Anchorage outside the breakwater is not recommended on account of the danger of fouling telegraph cables, of which there are eight.

Communication.—Telegraph cables belonging to the Eastern Telegraph company laid direct from Syra to the Peiræus, Thermia, Khios, Paros, and Tinos islands, and Megalo Kastron (Crete), afford connection with the principal ports of the Archipelago and the general world system (*see also* page 3).

There are frequent and regular lines of mail steamers to Peiræus. The following are the principal steamship companies maintaining a regular service with Syra:—Cunard, monthly from Liverpool, Patras and Corfu; Moss, monthly from Liverpool, Gibraltar, Malta and Black sea; Deutsche Levante, monthly from Hamburg, Rotterdam, Malta and Syrian ports, Pappayani, fortnightly from Liverpool, proceeding to Smyrna and Constantinople; Messageries Maritimes, fortnightly, from Marseilles, Patras, Saloniki, Constantinople and Odessa; and Austrian Lloyds, fortnightly, from Trieste, Corfu, Patras, Constantinople, &c.

Chart, 1,542.
Var. 4° 45' W.

There is also connection between Syra and the other Cyclades and Crete, by Turkish steamers twice a week. Thus outside the Archipelago, there is a more or less regular connection with London, Liverpool, Marseilles, Gibraltar, Malta, Trieste, Hamburg, Crete, Smyrna, Constantinople, and Black sea ports.

Quarantine.—Vessels arriving from infected ports, or with foul bills of health, are sent to the island of Rhenea or Greater Delos when the term of quarantine exceeds five days; under that period, quarantine can be performed in the harbour of Syra. There is a hospital supported by the municipality and by voluntary contributions. Patients of all nationalities are admitted free of charge.

Repairs, &c.—An establishment belonging to the Forges et Chantiers de Syra Company is capable of effecting large repairs to hull and machinery.

Vessels up to about 600 tons have been built here, but of late years, this industry has considerably declined. The wood comes chiefly from Constantinople.

Supplies, Water.—Fresh meat, vegetables, and other provisions can be obtained. Water is scarce, and bad in summer.

Coal.—About 110,000 tons of Welsh coal are imported annually, and 12,000 tons are usually in stock. There are 32 lighters of from 20 to 160 tons, and from 850 to 1,000 tons can be delivered in 24 hours.

Patent slip.—The same Company possesses a patent slip, on the blocks of which, depths of 10 feet forward, and 14 feet aft, are afforded; this slip has taken up a steamer of 1,771 tons, length 259 feet, breadth 37 feet.

Trade.—The exports consist chiefly of leather, vegetables, tobacco, emery stone, valonia, citrons in brine, &c.; the chief imports being raw hides, grain, rice, linseed oil, salt fish, coal, woollen and cotton yarns, &c.

In 1907, the exports were valued at about 104,254*l.*, of which 36,195*l.* went to the United Kingdom; and the imports at about 293,212*l.* of which 105,339*l.* came from the United Kingdom.

In the same year, 1,399 steam-vessels of 967,109 tons, and 1,291 sailing-vessels of 30,754 tons, entered the port of Syra; of these 135 steam-vessels of 212,686 tons were British.

Chart, 1,815.
Lat. 37° 22' N.
Long. 25° 4' E.

NATA is a small flat islet about 25 feet above the sea, lying S.E. $\frac{1}{4}$ S. $5\frac{1}{2}$ miles from Gaidaro lighthouse, and nearly on the parallel of the south end of Syra. There are 3 and 4 fathoms water around its north side, and about W. by S., $1\frac{1}{2}$ cables from it, is a detached rock with less than 6 feet water on it; the water all round the islet at the distance of a quarter of a mile is deep, and at night it should be carefully avoided.

Plan on 1,817.

JURA (GÿAROS) ISLAND, is situated 7 miles north-westward of Syra; it occupies a central position between Zea and Thermia on the south-west, and Andros and Tinos on the north-east, is roughly triangular in shape, and $4\frac{3}{4}$ miles nearly in length east and west, its eastern side being $2\frac{3}{4}$ miles in length. Jura is moderately high, barren, possesses no harbour, and had a population of only 18 persons in 1896. Glaro, a narrow islet, two-thirds of a mile in length, is nearly joined to the south-eastern end, and another but smaller islet lies on the north side of the western point. A sunken rock also lies about a cable from the shore three-quarters of a mile westward of the north-eastern point, elsewhere the water is deep, and free from off-lying danger.

ANDROS ISLAND, the northernmost and largest of the Cyclades, is 21 miles in length in a north-west and south-east direction, with an extreme breadth of about $8\frac{1}{2}$ miles. The island is mountainous throughout, the water-parting being chiefly on the south-western side, with spurs or ridges extending north-eastward. Mount Kovari, near the middle of the island, attains an elevation of 3,204 feet, and the summits of the mountains are covered with snow for months in the year. The island produces a large quantity of silk, fruit and wine, and corn generally sufficient for its own inhabitants. The town of Andros or Kastro is on the eastern coast, but there are various other towns, or villages, containing altogether in 1907, a population of 18,035. Chart, 1,820.
Var. $4^{\circ} 45'$ W.

West coast.—The description of the north-western coast, from cape Phassa to Gavriion bay, is given on pages 77 to 79.

In continuation of the west coast, to the south-eastward, Thíakion point, $2\frac{1}{2}$ miles from Megalo islet, is a prominent tongue of land at the base of Mount Kovari; on the south-east side of the point is a bay about three-quarters of a mile deep, and $1\frac{1}{4}$ miles from the point are the ruins of an ancient mole. The coast thence south-eastward to the Steno pass, a distance of 10 miles, is more or less cliffy, irregular, and backed by high mountainous land; the coast is steep-to and without off-lying dangers, but vessels under sail with north-easterly winds should be prepared for heavy squalls.

Steno point, the southern extreme of Andros, is the termination of Mount Aranka, which, at about 3 miles north of the point, is 2,250 feet high. From the point, the eastern coast of the island trends about N.N.E. $5\frac{1}{2}$ miles to Cape Hagios Kosmas, the extremity of the spur extending eastward from Mount Aranka. The coast, being the base of the ridge, is all along steep with no off-lying danger; it forms with the northern coast of Tinos, a wide opening, from the eastward, to Steno pass. Plans on 1,820,
1,815.

Steno pass, between Andros and Tinos, is 6 cables wide, the water deep, and the course though in mid-channel, E.N.E. or W.S.W. The points on either side should not be approached too closely.

The Steno pass is preferable to the Doro channel for low-powered vessels bound to the north-eastward or eastward with fresh northerly winds.

Current.—The current runs south-westward through the pass.

LIGHT.—A *flashing* light showing alternate *red and white* flashes *every five seconds* is exhibited at an elevation of 100 feet from a square masonry tower 30 feet high on the north-western Dysvaton islet, on the south side of the pass; it should be visible in clear weather from a distance of 16 miles. Lat. $37^{\circ} 40'$ N.
Long. $24^{\circ} 58'$ E.

Kordion (Kòrthion) bay, on the northern side of cape Kosmo, formed between two spurs extending eastward from the western mountain range, is $1\frac{1}{2}$ miles wide between Cape Kosmo and Vuni point north-west of it, narrowing to half a mile at its head, and is $1\frac{1}{2}$ miles deep. On the low shore at its head, are the storehouses of Kordion town, which together with several villages are situated on the rising land within, the population of the district in 1896 being 4,765. The bay has convenient anchorage depths in from 15 to 5 fathoms, sandy bottom, but it is entirely open to the eastward. The mountain ridge over the north-western side of the bay, is 1,895 feet high. Chart, 1,820.

Telegraph.—Kordion town is a telegraph station.

Port Kastro is $2\frac{1}{4}$ miles north-westward of Cape Akamatis, the northern entrance point of Kordion bay, the coast between forming one

Chart, 1,820.
Var. 4° 45' W.

or two little indentations; the port, between two small projecting points, is about 4 cables deep, and 2½ cables wide, with depths of from 4 to 12 fathoms, but open to the north-east, and seldom used. A ledge of rocks, covered and uncovered, extends from the north-western point, and on the inner part of the point is the town of Andros or Kastro, from which, roads lead to the different villages in the interior. The population of the town in 1896 was 1,817.

On the north-western side of the point on which the town stands, is a similar but larger bay than Port Kastro, with 10 or 12 fathoms water in the middle, and more generally used. A pier 200 yards long, extending southward from the north-west side of the bay, affords shelter to a few coasting vessels. In 1900, the French war-vessel *Condor* found good anchorage in 5½ fathoms, a cable southward of the outer end of the pier.

LIGHTS.—On Turliti islet, situated between the two bays and on the north-west side of the entrance to Port Kastro, is erected a cylindrical tower 21 feet high, from which is shown at a height of 54 feet above the sea, an unwatched *white fixed* light, visible from a distance of 12 miles in clear weather from the bearing of N. 69° E. through east, to N. 56° W.

A *red fixed* light is shown at an elevation of 33 feet from an iron standard on Kastro pier head; it should be visible in clear weather from a distance of 5 miles.

Communication.—Greek steamers call at Port Kastro as well as at Port Gavrión.

Coast.—From Port Kastro, the cliffy irregular coast with numerous little coves, trends north and north-westward to Cape Kabanos, the northern extreme of Andros; in this portion of the coast there are no anchorages nor off-lying dangers, and the island is exposed to the full force of north and north-easterly gales, with the attendant current. From Cape Kabanos, the steep coast turns abruptly to the west-south-west, and trends 5 miles in that direction to cape Phassa (*see* page 77).

Chart, 1,815.

TINOS ISLAND, separated from Andros by Steno pass, and one of the most productive of the Cyclades, retains its ancient name. It is about 15 miles in length, and nearly 7 miles in breadth at the south-eastern end, decreasing to the north-west and terminating at Steno pass, where it is not a mile broad. The island is mountainous, and rugged hills extend throughout its length; Mount Kolembo, near the centre, is 2,090 feet high, but the greatest elevation is at the south-eastern end, where mount Skhionia attains an elevation of 2,340 feet above the sea.

Products.—A large portion of the sides of the mountains and hills is covered with narrow terraces for vines and fig trees; the Tinos wine is good and of two sorts, of which, the white, the most esteemed, has a rich fruity flavour somewhat resembling Tokay. A great quantity of silk, the production of the island, is manufactured into stockings, gloves, &c.; strong, durable, and moderate in price. Corn grows plentifully, and there are also extensive quarries of marble, which is exported to Smyrna and other Turkish ports, after being worked into tombstones, slabs for baths and fountains; over 1,000,000 tons being quarried in 1907.

Provisions are plentiful, cheap and good; grapes, figs, melons, and vegetables are exported in great quantities, and honey is obtainable.

St. Nikolas or Tinos, the only town of any importance, is situated on the south-west side of the island at the foot of the hill facing the sea, on which stood the ancient city, the walls of which are

Lat. 37° 32' N.
Long. 25° 10' E.

still traceable. In addition to the town of St. Nikolas, which in 1896 contained 2,415 inhabitants, there are about 50 villages, large and small, on the island, the total population in 1907 being 11,186. The Tinians are skilful, industrious, and hospitable, with a simplicity which is interesting; the women, amongst the most beautiful of the Archipelago, possess a graceful carriage, and extremely pleasant manners. Within five minutes' walk of the town is the cathedral, the pride of the Tinians, which, built of white marble, forms with its courts, schools, &c., a picturesque group of buildings, having an imposing appearance from the sea.

There are also a large number of both Greek and Roman Catholic chapels throughout the island; the communicants of the latter amount to more than half the whole population of the island.

Oxoburgo, the former capital, situated in the interior, is now nearly deserted; in 1715, when it was the principal town, it was destroyed by the Turks and surrendered by capitulation, when the fortifications were partly destroyed. The remains of the fortress occupying the steep hill to the westward of the town, show it to have been a place of considerable strength, and though suffered to fall to decay it might easily be repaired.

Ports of Tinos.—There are no good ports in the island; the mole at Stauro bay, on the south-western coast, affords protection to a few small vessels, but it is too limited to be of use as a port of general resort. The holding ground outside the mole is uncertain, and the squalls so heavy at times, as to cause a vessel to drag with two anchors down.

Tinos harbour at the town of St. Nikolas is formed by two breakwaters, which afford protection for small vessels from all winds, excepting westerly ones. The entrance is about a cable wide, the depths varying from $1\frac{1}{2}$ to 5 fathoms, the anchorage space of over 3 fathoms being only about a cable in diameter.

The anchorage off the harbour is not recommended, especially for sailing-vessels, as there is difficulty in getting under weigh with the wind from the north-west, when it is extremely variable.

Lights.—A *red fixed* light is shown at an elevation of 16 feet from an iron pole at the end of the north breakwater.

A *green fixed* light, visible 4 miles, is shown at an elevation of 16 feet, from the end of the south breakwater.

Anchorage.—There is anchorage to the eastward of Cape Akroteri, in Nikolo bay, in from 10 to 14 fathoms, clay bottom. A good berth is about half a mile from the cape, with the spire of St. Nikolas cathedral bearing about N.N.W. westerly, and Cape Akroteri N.W. by W. $\frac{1}{2}$ W. A small shoal lies close off the cape, but it can be seen, and is not in the way of vessels coming to an anchor.

The anchorage in Nikolo bay is convenient for vessels bound to the northward through Mykoni channel; and also as a temporary stopping place for vessels bound to Syra during a northerly gale. In anchoring, be prepared for heavy squalls, and veer a good scope of cable.

Akako rock, with 6 fathoms of water on it, lies off Nikolo bay, bearing from Cape Akroteri S.S.E. $\frac{1}{4}$ E. distant half a mile; elsewhere the bay is clear.

Cape Joannis.—There is also shelter with north-easterly and north-westerly winds under Cape Joannis, the south-east extreme of Tinos island, but it is difficult to reach in a sailing-vessel, on account of the heavy squalls which rush down the side of the mountain. The Blabi rocks, awash or just above water, a mile south-westward of the cape, are a quarter of a mile from the shore, and steep-to.

Chart, 1,815.
Var. 4° 45' W.

Port Panormos, on the northern side of the island, possesses a secure anchorage for small vessels in the western part of the bay where there are some storehouses, and sheltered from northerly winds by Planumi islet. The northerly winds which prevail most of the summer months, blow directly into all the other bays on this side of the island. The port is frequented by small vessels for tombstones and marble slabs, the product of the extensive quarries in the immediate neighbourhood. The marble is of three kinds, dark grey with black veins, white, and green.

Communication.—Near Port Panormos, is a telegraph station.

Lat. 37° 39' N.
Long. 25° 5' E.

LIGHT.—From a lighthouse on the summit of Planumi islet, at an elevation of 279 feet above the level of the sea, a *white fixed* light is exhibited, visible in clear weather from a distance of 12 miles.

Mykoni channel.—When it blows hard from the northward, and the current then strong through the Doro channel, renders it impossible for a sailing-vessel to work through, the Mykoni channel is preferred, as the current is not so strong as in the Doro. Fast sailing-vessels having failed to pass the Doro, have succeeded in getting through the Mykoni channel without difficulty. The Mykoni channel is 4½ miles wide, and clear of danger, but the squalls from the high land must be guarded against. In approaching the coast of Asia, the water will become smoother, and a vessel will be able to work up under the lee of Khios.

RHENEIA.—The island of Rhenea or Greater Delos, 10 miles eastward of Gaidaro island of Syra, is about 4½ miles in length north and south, 2 miles in maximum breadth, and most irregular in shape, being almost divided into two islands by a narrow isthmus; the northern and larger part is the higher, being 490 feet above the sea. On the eastern side of the southern portion of Rhenea, opposite the larger Rematia islet, the ground in 1843 was strewn with fragments of sarcophagi and votive altars, but the tombs had been opened and none were entire. The absence of sepulchral monuments on Delos, and the quantities of sarcophagi on Rhenea, is accounted for by an ancient edict, forbidding either births, deaths, or burials to take place on the sacred islet of Delos, where no sacrifice which required the blood of an animal was permitted.

Rhenea has no port, except a little bay on the north coast of the southern portion of the island, and eastward of the isthmus above mentioned, fit for small craft with local knowledge. It is situated about three-quarters of a mile southward of the lazaretto. A rock which dries about a foot, lies about N. by E. 1½ cables from the extremity of this low point, and the passage in is on either side of it; the port is safe, but the small craft that enter it, must moor.

Quarantine.—Vessels arriving at Grecian ports, infected with the plague, or other infectious diseases, are sent to Rhenea to lie in quarantine and purify, for which purpose the lazaretto and storehouses were erected.

Lat. 37° 25' N.
Long. 25° 15' E.

The Lazaretto is situated upon a peninsula on the south-east side of the northern portion of Rhenea, about half a mile from the narrowest part of the isthmus. The sanitary office is erected on the middle of the narrow neck of sand connecting the quarantine establishment with Rhenea. Close to it, and on the south side of the neck, is a small landing pier.

A submerged breakwater has been built in front of the pier to shelter it; its centre and extremities being marked by stone pillars. Boats coming to the pier from the anchorage after passing the rocks lying off the south end of the lazaretto, should steer in with the western pillar in line with a conspicuous yellow house; round the pillar close-to, and

steer for the pier. This will keep a boat outside the rock in the centre of the bay, and which cannot always be distinguished. Chart, 1,815.
Var. 4° 40' W

Vessels, including men-of-war, which arrive at Rhenea to undergo quarantine, are required to report themselves as soon as possible to the medical authority who is also Captain of the Port, when they will be entered, quarantine commencing from that time. A Greek gunboat is usually stationed here to enforce the regulations.

Anchorage.—A fairly well protected berth for a large vessel is in from 13 to 14 fathoms, with the belfry of a small Greek church in line with the north part of a conspicuous white building, bearing N. 86° W. These leading marks are easily distinguished, as they are the two most southern white buildings, and situated just northward of the narrow isthmus connecting the north and south portions of Rhenea island.

Supplies.—Fresh provisions may be procured through the Sanitary officer who orders them across from Syra. A charge of 15s. is made for the boat hire.

Telegraph.—Rhenea is in communication with Syra and the rest of the world by telegraph, but telegrams can only be sent four times a day, viz., 10h. a.m., noon, 4h. and 7h. p.m. The telegraph office is at a place called St. George.

Communication.—Steamers do not call at Rhenea, but communication is maintained with Mykoni island by sailing-boat.

Miso bay, on the south-western side of the isthmus, affords anchorage during northerly winds in from 8 to 15 fathoms, sand. Lat. 37° 24' N.
Long. 25° 14' E

Dangers.—In coasting these islands, the salient points should not be rounded too closely. Most of the dangers can be seen, and are steep-to, the principal being some sunken rocks a quarter of a mile off the west coast of the northern portion of Rhenea, about three-quarters of a mile southward of Kaloyero point, its north-western extreme; also off the second point north of Miso bay. Rocks also skirt the inner part of Miso bay, and lie off the north-east extreme of the southern part of the island. Rocks also extend from Kako and Granite points, the north and south points of Delos, for which the chart will be a sufficient guide.

DELOS, between the points last mentioned, is 2½ miles in length north and south, and may average about half a mile in breadth; mount Cynthus, its greatest elevation about a mile from the northern end, is 350 feet high. At the south end of the island, is a low irregularly-shaped islet nearly touching it, the south point of which, called Granite point, is surrounded by rocks.

In 1896 the population of Delos consisted of 67 persons.

Delos, in ancient mythology, was considered to be the birthplace of Apollo and Artemis (Diana), and it was held so sacred that the islands surrounding it derived from the ancients the name of Cyclades. Captain Brock, R.N., who assisted in the survey of these islands, in 1843, writes:—

“The description of the wealth and magnificence of the buildings which formerly adorned this island, is in strange contrast to the complete air of desolation which now reigns over it, but which is not the work of time so much as the hands of men. The sites of the temples which formerly embellished the sea-shore, are now only traceable by fragments of broken columns and pieces of marble, which are daily being carried away for building purposes.

“Its lakes, fountains, and springs, are dried up, and the only remains in any preservation or objects of interest, are the theatre and an oval

Chart, 1,815.
Var. 4° 40' W.

basin. The theatre was a splendid building, and still possesses an air of grandeur strangely at variance with the solitude and desolation around it. On the north-west side of mount Cynthus, and about halfway up, is a remarkable passage or cave, formed by huge stones reclining and meeting each other at the top, so as to form a sort of arch which led to some subterranean chamber, probably the treasury of Delos; it now serves to shelter goats from the sun.

"Other remains, such as ancient walls, heaps of shapeless masses of marble with broken and prostrate columns, are still extant; of the latter, those immediately facing the sea, lie as if overthrown by an earthquake, side by side as they formerly stood. A trunk of a colossal marble statue (presumably Apollo), 6 feet across the shoulders, broken in two, without head, arms, or legs, still lies on the ground. The view looking down from the mouth of the cave towards Syra, and over the broken and tortuous shores of Rhenea, is most beautiful. The island is overgrown with brushwood on which goats feed; rabbits are very numerous, and the sides of the hills thickly dotted with their holes. An attempt has been made to cultivate a small portion of the soil, but there are only a few inhabitants, and the Mykonites are the proprietors."

Plan on 1,815.

Dili strait.—Delos is separated from Rhenea by a narrow strait named Dili, having the two islets of Rematia lying in the middle, the larger islet (ancient *Hecate*) with Little Rematia $1\frac{1}{2}$ cables north of it; both islets are barren and uncultivated. Opposite the south end of the northern islet, on the shore of Delos, the remains of a circular mole are to be traced, now-filled up with sand.

The passage between the Rematia islets and Delos is narrow, but passable for vessels under 10 feet draught.

The larger and western passage or that between the Rematia islets and Rhenea, carries 5 fathoms water through it, and is often used by merchant vessels; with northerly winds a strong current sets to the southward.

Anchorage.—The best anchorage in Dili strait, is in the northern part, known as Delos harbour, in from 9 to 12 fathoms water, good holding ground, consisting of dark sand, mud and weed. About a quarter of a mile southward of Hecate island, and rather nearer to Rhenea than to Delos island, H.M.S. *Barham* in 1893, rode out a heavy northerly gale, the west extreme of Hecate island bearing North, and Mount Cynthus, Delos island, N.E. by E. $\frac{1}{2}$ E. In deeper water towards the centre, the holding ground is not so good. There is no danger in entering the strait from the southward, which is half a mile wide.

Shoal.—A $3\frac{1}{2}$ fathoms patch lies N.E. by N., $1\frac{1}{2}$ cables from Dili point, the eastern entrance point of Dili strait.

MYKONI (MYKONOS) ISLAND is of an irregular form, the length of its greater axis in a west-south-west and east-north-east direction, being $8\frac{1}{2}$ miles between Algo and Euro points, while in a north and south direction westward of Port Panormo, it is nearly 6 miles across. Its greatest elevations are at the north-west and eastern ends, where the heights are respectively 1,195 feet and 1,150 feet above the sea. The island is for the most part rocky, and huge blocks of granite are wildly strewn over the hills, the only cultivated ground being in the vicinity of the town of Kamenaki on the west side of the island, where there are some few cornfields and vineyards; elsewhere the ground only affords pasture for a few flocks. Nevertheless, the town is prosperous, but with dirty streets, though by

Chart, No. 2,836a.

Lat. 37° 22' N.
Long. 25° 16' E.

Chart, 1,815.

the aid of whitewash, it looks well from seaward. There are about thirty vessels and many boats belonging to the island, and a large number of the population lead a seafaring life. By the census of 1907, the number of inhabitants amounted to 4,589. Numerous small churches and chapels are scattered throughout the island of Mykoni.

Chart, 1,815.
Var. 4° 40' W.

LIGHT.—From a lighthouse 44 feet high, erected on Cape Armenisti, the north-west extreme of Mykoni island, is exhibited at an elevation of 604 feet above the sea, a *white fixed and flashing* light. It is *fixed for thirty seconds*, followed by *five flashes* each of *three seconds* duration, with eclipses of *three seconds* between each *flash*, the whole period of system being *one minute*. It is visible from N. 27° E., through east, to S. 66° W. from a distance of 30 miles in clear weather. Gaps in the land permit the light to be occasionally seen from the southward.

Lat. 37° 29' N.
Long. 25° 19' E.

Turla bay.—The anchorage in Turla bay is just north of the town of Kamenaki, in 13 fathoms water, good holding ground; but vessels bound through the Mykoni channel, and having to take shelter here in strong “meltems” or north-easterly winds, generally anchor in the northern part of the bay, in 9 or 10 fathoms, sandy bottom with patches of weeds. In rounding the north-western end of Mykoni, two small chapels will be seen, one on the point immediately south-east of Cape Turla, the other close to the shore farther on; near these, is the anchorage last mentioned.

The Korpho is, however, considered the safest anchorage; this inlet is a mile deep, and though open to the north-westward, vessels lie here during summer, and at times lay up for the winter. Off the western point of the entrance, is the little islet of St. Georgio with a church on it, and to the north-west of St. Georgio is another but smaller rocky islet, and between them is a depth of 5 fathoms. Extending one-third of a mile S.S.W. $\frac{1}{2}$ W. from the latter islet, and about the same distance from St. Georgio, are two rocky shoals with one fathom water on them, difficult to distinguish.

In anchoring in the Korpho, avoid the rocky shoals just mentioned, and with the inlet open, steer for the centre of the low neck of sand at its head until in 13 or 12 fathoms, sand, and then anchor; small vessels can proceed nearer the head of the harbour, anchoring in 3 to 5 fathoms, the water gradually shoaling to the perfectly flat shore; if intending to remain a short time, steady the vessel by hawsers to the shore. Large vessels should anchor farther out or north of the town; the holding ground is good, but the water rather deep.

LIGHT.—A *red fixed* light is shown at an elevation of 23 feet from a mast on the end of Kamenaki breakwater, which is 360 feet long; it is visible in clear weather from a distance of 4 miles between the bearings of S. 18° E. and East.

Water.—On the western side of the Korpho, is a small run of fresh water.

Communication.—Greek steamers call at Kamenaki from Syra and adjacent islands.

Telegraph.—The town of Kamenaki is a telegraph station.

Praso islets.—The passage between Mykoni and Delos, is obstructed by the little rocky islets of Praso.

Lat. 37° 23' N.
Long. 25° 19' E.

A rock with one fathom of water over it, lies S.E. by E. $\frac{1}{2}$ E. 3 cables from the south-west Praso islet, and S.S.W. a little more than that distance from the eastern extremity of the eastern islet.

Chart, 1,815.
Var. 4° 40' W.

When bound to or from Turla bay, care should be taken to avoid this danger; also, the one-fathom shoals off St. Georgio islet.

With these exceptions the channel between Delos and Mykoni islands is deep and clear.

Current.—During northerly winds the current runs strong to the southward, between Praso islets and Delos.

Port Ornos.—Port Ornos, on the south side of Mykoni, is nearly similar in shape to the Korpho on the north, separated from it by the low neck of sand before mentioned, and open to the southward; the holding ground is good, but it is only fit for small vessels. Alogo point (the south-western extreme of Mykoni), and the point on the eastern side of the port, are both rocky and foul, and should be avoided.

Santa Anna bay is a little over 4 miles eastward of port Ornos; the coast between is irregular, forming two or three open bays. With northerly and westerly winds, there is anchorage in Santa Anna bay, a short mile north-north-eastward of Cape Makrokephalo. Fronting the entrance of the bay, is a small low rocky islet, which may be passed at a short distance on either side, and the anchor let go in 10 or 9 fathoms, sand; farther out, the bottom is rocky.

Port Panormos.—The north coast of Mykoni is rugged and irregular, and a bight called Port Panormos, a little more than half a mile wide at the entrance, extends southward upwards of 2 miles, the depth decreasing from 30 fathoms in the entrance to 5 fathoms near its head. An islet and several large rocks above water, lie on the western side of entrance; the bight is completely open to the northward, there is no village, and it is seldom visited.

Lat. 37° 29' N.
Long. 25° 28' E.

Euro point.—Two large rocks above water, lie about 2 cables off Euro point, the north-eastern extreme of Mykoni.

Dragonisos islet.—Off the eastern side of Mykoni, is the islet of Dragonisos, about $1\frac{1}{4}$ miles in length north and south, and 585 feet high. Skirting the west coast of the islet, here and there, are rocks above and below water, and which also extend a quarter of a mile off the northern end. There is a fine cavern on the west side of the islet. The passage between Dragonisos and Mykoni is three-quarters of a mile wide, and, in mid-channel, deep and clear.

Stapodia islet is 4 miles south-eastward of Dragonisos, and its southern end is $7\frac{1}{2}$ miles S. 83° E. from Cape Makrokephalo of Mykoni. It is a narrow irregular islet about 8 cables in length, with shoal ground and rocks above water, extending N.E. by N. nearly half a mile from its northern extremity. A rock above water with a sunken danger close to it, lies off its western point. Most of the dangers can be seen, but there is no need to be close to the islet.

Chart, 1,837.

MERMINGA ROCK.—This isolated rock, in lat. 37° 11' 40" N., long. 25° 4' E., and about 50 feet high at its north-west end, lies W.N.W. distant $8\frac{1}{4}$ miles from Cape Korax, Paros island, and $6\frac{1}{2}$ miles from the nearest coast of that island. As the rock rises from, and is surrounded by, deep water, and is also a long distance from land, especial caution is necessary when in its vicinity, so as to avoid it at night or in thick weather. (See view of Paros island from the rock, on chart, No. 1,837.)

Chart, No. 2,836a.

PAROS.—This island, about 12 miles in length in a north-east and south-west direction, is rather more than 7 miles in breadth, and appears like a round mountain with two summits about three-quarters of a mile apart, of which Mount St. Elias is 2,530 feet, and Mount Koromboli 2,450 feet high. The land from these elevations slopes evenly down to the cultivated plains below, which are mainly at the north-east and south-west ends of the island. The soil is fertile but imperfectly cultivated, though in good seasons a large quantity of wine, barley, and wheat are produced; but there are no olives, and very few other trees on the island. Sheep, goats, oxen, and asses are numerous. Parœkia, the capital, on the north-west side, and Marmora on the south-east, are subject to intermittent fevers. The population of the island in 1907, amounted to 8,491.

Chart, 1,837.
Var. 4° 40' W

Paros is celebrated for its white marble quarries, which supplied material for the finest specimens of ancient Greek sculpture. These quarries are underground at the rear of Parœkia, and the marks of the instruments which the ancients used, are still visible everywhere.

PORT PARŒKIA, in the middle of the north-west coast of Paros island, is $1\frac{2}{3}$ miles deep east and west, and about half a mile wide at the entrance, but only about half that width between the 5-fathoms line on either side. The port is open to the westward, and fronted by a chain of islets and rocks extending from the north end of Antiparos island.

Lat. 37° 5' N.
Long. 25° 9' E.

LIGHT.—On Phikas point, the northern entrance point of port Parœkia, a *white fixed* light is exhibited at an elevation of 44 feet above the sea, visible in clear weather from a distance of 4 miles.

Shoals.—On the southern side of entrance, are Peponi rocks above water, and farther in, Superbe rock below water. In the central part of the port, is a small rocky shoal with less than 6 water water on it, marked by a white beacon surmounted by a staff.

Directions.—St. Georgio church in line with Krio point on the north side of the port, bearing N. 73° E. leads southward of the shoal ground extending from Phikas point, and northward of the rocky shoal in the central part of the port, just mentioned. In the middle of the port there are from 6 to 14 fathoms water, sand and mud, but it is not adapted for large vessels. The best berth is northward of the town.

Parœkia town, though not large, nor presenting any appearance of opulence, has a pleasant aspect; it consists of neat small houses, with terraced roofs surrounded by gardens and vines on trellises, and in 1896 contained 2,691 inhabitants. The church of "Our Lady of the Hundred Gates," is a fine building, said to have been founded by the Empress Helena. Upon a rocky height on the sea side, in the centre of the town, are the ruins of a castle, constructed chiefly of marble from some ancient buildings on the same spot. To the north of the castle, is the ruined church of "Our Lady of the Cross," which contains the only perfect specimen of Hellenic architecture in Paros, a semi-circular apse of white marble. Fragmentary remains are in abundance.

There are two small piers on the town side of the port.

Communication.—Greek steamers call here from Syra and the adjacent islands, and there is telegraphic communication with Syra and the rest of the world.

Plan on 1,832.
Var. 4° 40' W.

LIGHT.—On Cape Korax, the north extreme of Paros on the western side of entrance to Port Naussa, from a square lighthouse 32 feet high, at an elevation of 193 feet above the sea, a *white fixed* light, varied by *red* flashes *every two minutes*, is exhibited, visible in clear weather from a distance of 12 miles. It was reported to be irregular in 1893.

PORT NAUSSA, at the north end of Paros, is one of the best ports in the Cyclades, and large enough to contain a large number of ships. Its entrance is one mile wide between bold shores, clear of danger, and open to the northward. Immediately within, the port opens out more than 2 miles east and west, forming a bay on either side, and extends $1\frac{1}{2}$ miles south-west to a low shore at its head; the shore is bordered all round by shallow water, and encumbered by islets both on the western and eastern sides.

The town of Naussa, on the south of the port containing in 1896 a population of 1,325, is at times unhealthy.

Lat. 37° 9' N.
Long. 25° 14' E.

Anchorage.—There is ample room and well-sheltered anchorage in from 6 to 9 fathoms water, mud or sand, and weeds, in the north-western part of the port, called Yanni bay. In entering Yanni bay in a large ship, the north point should be given a berth of a cable. Merchant vessels generally anchor south-west of St. Artemios and St. Kali islets on the western side of the port, in 4 or 5 fathoms. A rocky shoal with less than 6 feet water on it, extends $1\frac{3}{4}$ cables S.E. by E. $\frac{1}{2}$ E. from the south end of St. Artemios, the northern islet. There is also well-sheltered anchorage in 7 fathoms, in the north-eastern part of the port called Langeri bay; but in taking this anchorage, a vessel should pass southward of the 3-feet shoal lying $1\frac{1}{2}$ cables S.S.W. of Kamina point, passing between this shoal and the northern end of Mavro islet.

Water may be obtained, but not with a northerly wind.

Coast.—The north-eastern end of Paros is surrounded by several islets, rocks, and shoals; the islets are steep to on their seaward sides, there is nothing to take a vessel between them and the coast, and if bound into Port Naussa, they should be given a fair berth, and also the rocky shoal bordering Tripetro point at a distance of more than half a cable, on the eastern side of entrance to the port.

The east coast of the island is indented by several bays affording little or no shelter, but with no off-lying dangers other than those to be particularly described in connection with Naxos (*see* page 273).

PORT TRIO, on the south-eastern side of Paros, is formed between two slightly projecting points of the coast called Capes Khiuni and Pyrgo; the island of Trio on the south-east, and the islets of Makro and Praso which partly protect it on the east. The island of Trio is triangularly shaped, its sides being about half a mile in length, and $6\frac{1}{2}$ cables from the shore; the space between affords good summer anchorage, but is exposed to south-west and southerly winds which cause a considerable swell, and it is therefore unsafe in winter. Vessels may anchor where convenient, but the best berth is rather nearer the island of Trio than Paros, in 7 or 8 fathoms water, sand and weeds.

Water.—The watering place at Trio point midway between Capes Khiuni and Pyrgo, will be known by the houses, and a ship may obtain a plentiful supply. Near the place where the boats should anchor are several rocks, which circumstance renders watering difficult with south-west and southerly winds, when a sea sets in. With a canvas hose

about 60 yards in length, 90 tons of water may be obtained in 12 hours with sufficient boats, and under favourable circumstances. Plan on 1,832.
Var. 4° 40' W.

Makro.—The islet of Makro lies north and south 3 cables in length, with some small islets or rocks at the north end from which shoal ground extends a long cable northward, leaving 7 or 8 fathoms water, in the narrow space between it and Praso islet, farther north. Shallow rocky ground extends $1\frac{1}{4}$ cables southward from Makro islet. Lat. 37° 0' N.
Long. 25° 17' E.

Directions.—With a leading wind and under favourable circumstances, a vessel may pass out between Praso and the coast, by keeping about a cable from the islet, into the channel between Paros and Naxos. In going out between Trio and Makro islets, the shoal extending a cable north of the former, and the rocky ground extending southward of the latter, must be avoided.

ANTÍPAROS is 7 miles in length north and south, including the islets at the north end, with an extreme breadth of $2\frac{3}{4}$ miles, and its most elevated part said to be a solid block of marble, is 1,010 feet above the sea; it produces a little corn and wine, and with fishing, the inhabitants who in 1896 numbered 596 and lived chiefly in the village of Kastro, manage to support themselves. The village stands on a ridge about two-thirds of a mile from the north end of Antiparos, and from it the time to the grotto on a donkey is an hour and a half. Chart, 1,837.

A small quantity (250 tons) of zinc ore (calcined calamine), was shipped from this island in 1898.

Port Despotiko (Episkopi).—This snug little anchorage, on the south-western side of Antiparos and nearly $2\frac{1}{2}$ miles from cape Petalitha, the south extreme of the island, is sheltered from all but southerly winds; the port is about a mile in length, 4 cables wide at the entrance, and from 10 to 2 fathoms deep. The only interest here is the celebrated grotto; to reach which, land on the northern shore of the port, about 500 yards to the south-east of the few scattered houses seen on the shore, cross the hill in a north-easterly direction, and after reaching the summit the entrance of the grotto will be observed. On the side of a distant hill to the north-east, it shows as a large and distinct dark blotch on the side of the hill, about three-fourths from the top. The grotto is reached after $2\frac{1}{2}$ hours' easy walking and climbing.

Despotiko island, which forms the western side of the port, is $2\frac{3}{4}$ miles in length east and west, about a mile in average breadth, and its highest part mount Kudro, rises 640 feet above the sea, over the bold cliffy head of the same name on the south.

Strongylo (Strongyli) island.—Westward of Despotiko, and separated from it by a channel $4\frac{1}{2}$ cables wide, with 14 fathoms water in the middle, is the bold rugged island of Strongylo, 615 feet high; both these islands are barren, without inhabitants, and their south coasts steep-to. Lat. 36° 57' N.
Long. 24° 58' E.

Kalika rocks are two patches, with $2\frac{1}{2}$ fathoms water on each, lying about N. $\frac{1}{4}$ W. 8 cables, and $1\frac{1}{10}$ miles from the northern end of Strongylo; between the patches, there are from 5 to 13 fathoms water. The boat passage between Despotiko and the islet north-eastward of it, kept open of Kalika point, the north extreme of Despotiko, S. 77° E. leads northward of the rocks; the west side of Strongylo bearing eastward of South, will lead westward of Kalika rocks.

Chart, 1,837.
Var. 4° 40' W.

ANTÍPAROS STRAIT is formed between the islands of Antíparos and Paros. The entrance on the south between the southern extremities of Paros and Antíparos, is $5\frac{1}{2}$ miles wide, but contracted by a chain of islets, rocks, and shoals, which lie mainly off the coast of Paros; the outer and largest of these islets is named Pandros, and the inner, $1\frac{1}{2}$ miles to the north-north-west, is called Turna. The passage east of these islets has depths of from 6 to 20 fathoms, and westward 8 to 30 fathoms.

Anchorage.—There is temporary anchorage during fine weather in summer, for visiting the grotto of Antíparos, a little northward of Akako point in from 9 to 12 fathoms. Landing will be found in the little sandy bay westward of the point from which the grotto is distant about three-quarters of a mile. A rugged path will be seen or a guide found.

Anavadi rock.—At $5\frac{1}{2}$ cables N.N.W. $\frac{1}{4}$ W. from Turna islet, and rather more than that distance E. $\frac{1}{4}$ S. from Glipho point (Antíparos), is Anavadi rock, with less than 6 feet water on it, and 5 fathoms around. Anavadi rock will be avoided by keeping about a quarter of a mile from Glipho point.

Petalitha rock is situated 2 cables from the eastern side of Antíparos island, and 9 cables to the northward of Cape Petalitha. The sunken rock lying about one cable north-east of this islet, is at times a foot above water; when this is the case, there will be less water in the strait to the northward than marked on the chart.

Fourteen-feet pass.—The northern end of Antíparos strait, between Paros and Antíparos, is only about $4\frac{1}{2}$ cables across, and encumbered with islets, rocks, and shoals, leaving a very narrow channel carrying 14 feet water on the Antíparos side of Budaria islet, called the Fourteen-feet pass of Kastro.

The eastern point of the little islet of Oro, in line with the western cliff of Turlo rock (which is remarkable, being somewhat like a square tower), and bearing about N. 3° E., leads through the pass, but it is so very contracted and dangerous, that it is unadvisable to take it unless under favourable circumstances and in cases of necessity, when the chart and eye must be the guide. (*See view A on chart No. 1,837.*)

From the north end of Antíparos island, another chain of islets, rocks, and shoals extend 3 miles north-north-eastward, which terminate in the Portis, two small islets or rocks steep-to, and $1\frac{1}{2}$ miles from the shore of Phikas point on northern side of entrance to Port Parækia.

The Buves.—Between the Portis and Spiridioni rocks, $1\frac{1}{10}$ miles to the southward, are the Buves, three of which are above water with sunken rocks around them, one of the latter being $2\frac{1}{4}$ cables south-west of the southern dry rock. The passage between Spiridioni rocks and Turlo rock on the south, is half a mile wide, with 15 fathoms in mid-channel. The Skala, half a mile eastward of Spiridioni rocks, and $3\frac{1}{2}$ cables from the shore of Paros, is surrounded by shoal water, and should be given a berth.

Temporary anchorage.—There is temporary anchorage for small vessels during summer, in 5 or 6 fathoms water, sheltered from all but north-easterly winds, in the bight formed by Kabura and Diplo islets, and north of Oro. The two former are the largest of the islets extending northward from Antíparos, and nearest to that island.

The above islets and rocks cover the approach from the westward to Port Parækia, and the Fourteen-feet pass of Kastro; the passages between them are deep, and when taken, the chart and the eye

Plan on 1,837.
Lat. 37° 2' N.
Long. 25° 6' E.

Chart, 1,837.

must be the guide, but from the westward for Port Parœkia, the safest way is to pass northward of all. Chart, 1,837.
Var. 4° 35' W.

NAXOS (ancient *Naxia*), one of the large islands of the Cyclades, being 18 miles in length north and south, with an extreme breadth of 12 miles, is mountainous throughout its length; the highest summit, Mount Zia, is 3,290 feet, and Mount Korono, about one-fourth from the northern end, is 3,250 feet above the sea. Besides the capital, the island contains 38 villages; the entire population in 1907, amounted to about 16,694, nearly all Greeks.

Productions.—Naxos contains granite, serpentine, and marbles scarcely inferior to those of Paros; groves of olive, orange, cedar, pomegranate, fig, and lemon trees abound in the well-watered valleys, and a large quantity of fruit, oil, corn, and wine is exported; a white wine it produces, is in especial repute. Emery is found in large quantity, especially in the southern parts of the island, 10,980 tons being exported in 1907.

Naxia bay, on the western side of Naxos, is semi-circular, more than $1\frac{1}{2}$ miles wide, about three-quarters of a mile deep, and open to the northward. Mungri point, on the south side of the entrance to the bay, has a large rock off it above water, and is surrounded by shoal ground; at about 4 cables south of the point, Mount Strongylo rises to a height of 500 feet. Plan, 1,732.
Lat. 37° 7' N.
Long. 25° 23' E.

The south shore of Naxia bay is low, broken, and skirted by rocks and shallow water; the sea runs into a large salt lagoon on the south, and eastward of the lagoon is the plain of Naxia.

The islet of Bacchus about a cable in diameter, lies close off the northern point of the bay and nearly connected to it. The ancient name of the islet was *Palæti*; it derived its modern name from the ruins of a temple of Bacchus, of which only the western portion now remains. The massive proportions have an appearance of remote antiquity; the portal consists of three huge marble slabs, two standing erect on basements, and one laid across on the top. (See view of Naxia from Bacchus islet on plan of the bay, No. 1,782.)

From Bacchus islet to the southern part of the town, the shore is fronted by broken shallow rocky ground, and near the north part of the town, below the surface of the water, are the remains of an ancient massive mole; within it, there is a depth of 3 to 4 feet.

Guardian rock.—At a third of a mile N. by E. from Mungri point, is Guardian rock above water with rocky ground round it, and three-quarters of a cable N. by W. from the rock, is a rocky patch with $1\frac{1}{2}$ fathoms water on it. Between Guardian rock and Mungri point, there are from 7 to 11 fathoms water.

Anchorage.—The usual anchorage is about half a mile westward of the town, in 6 or 7 fathoms, sand and weeds; farther westward the water deepens rather suddenly. A swell nearly always sets into the bay, and the anchorage is not considered as safe as Procopi bay farther south.

Shoal.—A patch of 26 feet is reported to lie about 3 cables W.S.W. from Bacchus island, but the position is doubtful.

Naxia town.—The town of Naxia, on the northern point of the bay, occupies the site of the ancient town, and in 1896 had a population of 1,761; the white houses rise from the shore one above

Plan, 1,732.
Var. $4^{\circ} 35'$ W.

the other on a conical hill, and afford a pleasing aspect from seaward, though the streets are narrow, intricate and dirty. An ancient ducal palace is in ruins, and north of the town is the fountain of Ariadne, a small rill.

Telegraph.—Naxia is a telegraph station.

Chart, 1,837.
Lat. $37^{\circ} 3'$ N.
Long. $25^{\circ} 20'$ E.

Amaridi rocks.—Naxos island is separated from Paros island by a channel $2\frac{1}{2}$ miles wide, having between the rocks about to be described, and Paros island, a depth of 17 fathoms. Amaridi rocks are a dangerous low ledge of rocks with shoal water, the whole, under the depth of 5 fathoms, occupying a space of half a mile in a N.N.E. and S.S.W. direction, and lying in mid-channel. The highest rock bears E. $\frac{1}{4}$ S. distant $1\frac{9}{10}$ miles from Krazi point, Paros; W. by N. $\frac{1}{4}$ N. distant $1\frac{7}{10}$ miles from Aspro rock; and S.W. by S. distant $1\frac{7}{10}$ miles from Procopi point, Naxos. These rocks are seen from some distance, and the sea at times breaks heavily over them. A 7-fathoms patch lies S. by W. $\frac{3}{4}$ W., nearly half a mile from the southern Amaridi dry rock.

Chapman rock.—A little westward of the line joining Amaridi rocks and Procopi point, and 6 cables from the latter, is a rock with less than 6 feet water over it, called Chapman rock. To avoid these dangers at night, keep the coast of Paros aboard.

Procopi bay.—Procopi point is the western extreme of Naxos, and on its southern side, is Procopi bay, which affords good anchorage with all northerly winds in 6 or 7 fathoms, sand and weeds. A rocky bank, with 4 to 5 fathoms water on it, lies 2 cables southward of the point, leaving between, a depth of 6 fathoms.

Shoals.—St. Nikolaos church is situated upon the south-eastern point of Procopi bay; and S.W. $\frac{1}{4}$ S. 3 cables from this church, is a rock with less than 6 feet water over it.

A 4-fathoms patch lies W. by S. $\frac{3}{4}$ S., distant half a mile from the same.

Aspro and Laro rocks.—From St. Nikolaos church point, the shore south-eastward is bordered by a bank, with scattered rocks here and there, which extend off nearly half a mile. Aspro rock, one mile S. by W. of the point, and nearly three-quarters of a mile from the shore, is about a cable in diameter, and rises 280 feet above the sea, from the centre of a rocky shoal a third of a mile in extent east and west under the depth of 5 fathoms. Between the shoal and the shore bank, there are 6 fathoms water. At about 2 cables south-eastward of Aspro rock, are Laro rocks, a cluster above water and 2 cables in extent, with 8 fathoms water between them and Aspro rock.

Lat. $37^{\circ} 1'$ N.
Long. $26^{\circ} 22'$ E.

Cape Parthénos projects from the low shore about $1\frac{1}{2}$ miles south-south-eastward of Aspro rock, and is surrounded by shallow water and rocks; off it are two or three little islets. Although these islets and rocks are generally steep-to, they should be avoided.

Anchorage.—At $2\frac{1}{2}$ miles south-south-eastward of Cape Parthénos, is Ioannis point, surrounded at a distance of about 3 cables, by shallow rocky ground; and at three-quarters of a mile farther on, is Kurupa point projecting to the south, with a small chapel on it. Good anchorage will be found at a short half mile eastward of this latter point, sheltered from all northerly winds, in 9 fathoms water, sand and weeds. Also, similar anchorage off a little bay a little more than a mile eastward of the above. A little islet called Black rock with shallow water around it, lies about two-thirds of a mile from the shore, at $1\frac{1}{4}$ miles south-eastward of Kurupa point.

Reported shoal.—Cape Katomeri is the southern extremity of Naxos island, and a mile north-west of the cape is Gaitani point, W. $\frac{1}{2}$ N., 8 cables from which, is the reported position of a shoal with $2\frac{1}{2}$ fathoms on it. Chart, 1,837.
Var. 4° 35' W.

Current.—During north-easterly winds, or in calms, the current between Paros and Naxos sets to the southward about $1\frac{1}{2}$ knots an hour, but with westerly winds, it sets one knot an hour to the northward. Also between Naxos and the group of isles on the south-east the current is similarly affected, setting through the channels to the south-west and south with north-easterly winds and in calms, at the rate of $1\frac{1}{2}$ knots an hour, and with westerly winds to the north-east and north one knot an hour.

South coast of Naxos.—The coast from Cape Katomeri, eastward to Cape Panermo, a distance of a little over 5 miles, is bold and irregular, forming several little bays; there are no other off-lying dangers excepting Delo rocks, and the water is all along deep. There is temporary anchorage during fine weather in the little bay of Kalando, about $1\frac{1}{2}$ miles north-eastward of Cape Katomeri.

Delo rocks.—This dangerous bed of sunken rocks, on the south coast of Naxos, is about a third of a mile in extent in a north-west and south-east direction, and lies a short half mile south-westward of the headland forming the western side of entrance, and in front of the little bay of Panermo. On this bank, are two rocks with less than 6 feet water on them, lying N. by W. $\frac{3}{4}$ W. and S. by E. $\frac{3}{4}$ E. 2 cables from each other, the inner rock being $3\frac{1}{2}$ and the outer 5 cables from the shore. The latter bears W.S.W. and is distant 9 cables from the south-east extreme of Cape Panermo. Between this bed of sunken rocks and the shore, there are from 6 to 17 fathoms water.

East coast.—From Cape Panermo, the bold eastern coast of Naxos trends northward nearly straight for 8 miles to Cape Mutsoma, a prominent headland projecting eastward about three-quarters of a mile from the general line of coast, and having a large rock at its extremity.

Anchorage.—In the bight called Mutsoma bay, on the south side of the cape, there is anchorage with all off-shore winds.

Cape Stauro, the northern extreme of Naxos, is 8 miles from Cape Mutsoma. The coast between is slightly irregular with one or two little bays, and the spurs of the hills projecting from Mount Korono, which at $3\frac{1}{2}$ miles inland, is 3,250 feet high; the water is all along deep, with 45 fathoms at 2 cables north of Cape Stauro. At Apollona bay, $1\frac{1}{2}$ miles south-east from Cape Stauro, is an unfinished colossal statue, lying in an ancient marble quarry; it is roughly hewn, and 34 feet from head to feet. The natives have always identified it with a statue of Apollo. Lat. 37° 12' N.
Long. 25° 33' E.

Makarice isles.—These three rocky islets lie directly eastward of Cape Mutsoma; the two northern, St. Nikolo and Prasini, are nearly connected, having only 6 feet water between them. Strongylo, the southern islet, is a quarter of a mile from Prasini, and between there are from 10 to 20 fathoms. St. Nikolo, the largest of these islets, is irregular in shape, and nearly a mile in extent; the two smaller are each half a mile in length. The water is everywhere deep about them, and the passage between them and Cape Mutsoma is $3\frac{1}{2}$ miles wide, and from 20 to 47 fathoms deep. Charts, 1,837,
1,866.

Kopria islet.—The little islet of Kopria, about a third of a mile in extent east and west, with deep water all round it, lies $5\frac{1}{2}$ miles south-westward of Strongylo, and $2\frac{1}{2}$ miles north-eastward of Apano-Kupho, mentioned in the next paragraph.

Charts, 1,837,
1,866.
Var. 4° 20' W.

Heraklia and Kupho islets.—South-eastward of Naxos are several barren rocky islets; the principal beginning from the south-west are Heraklia, Echinosa, Kato-Kupho, Apano-Kupho, Karos, Drima and Antikaros, besides which, there are several smaller, forming altogether a group of twenty-three islands and islets. In 1896 the islands had a total population of 1,829. Traces of ancient buildings have been found on some of them. They extend 15 miles in an east and west direction, and are separated from Naxos by a passage 2 miles wide, which, with the exception of Delo rocks described above, is clear and deep.

Chart, 1,837.

Kato-Kupho and Apano-Kupho are only about $1\frac{1}{2}$ cables apart; in the channel between, the depths are 3 to $4\frac{1}{2}$ fathoms. In the bight which they form on the south-east, there is temporary anchorage in 6 to 8 fathoms water, sandy bottom, but exposed to winds between north-east and south-east. The water about these islets is generally deep and free from danger.

Chart, 1,866.
Lat. 37° 7' N.
Long. 25° 50' E.

DENUSA ISLAND (ancient *Lelandros*) is an irregularly formed islet about 3 miles in diameter, and 1,605 feet high. On its north-eastern side, is Rusa bay with a cove at its head, and on the north side of the bay is the little islet of Trigono, which shelters the cove from the north-east; the islet is connected to Denusa, by a shoal with 4 fathoms water on it. Off the point, between Cape Kalota and Aspron point, the north and west extremes respectively, are some rocks showing above water; on the south coast are two or three little bays. There were 136 inhabitants in 1896. Between Denusa and the Makarizis isles, the water is deep, and the passage nearly 4 miles wide.

Chart, 2,836a.

Buey (Melanti) rock.—This isolated little islet or rock, situated in lat. $37^{\circ} 14\frac{1}{2}'$ N., long. $25^{\circ} 56'$ E., is only $1\frac{3}{4}$ cables in length in a north-west and south-east direction, about 180 feet high, pyramidal in shape, bold and rugged, and surrounded by a narrow bank; rocks above and below water, extend off more than half a cable from its east end, off which, at the distance of a cable from the shore, there are from 20 to 45 fathoms. Buey rock lies $7\frac{1}{2}$ miles north-eastward of Denusa, and 17 miles S. by W. $\frac{1}{2}$ W. nearly from Cape Papas, the south-west extreme of Nikaria.

Chart, 1,866.

AMORGOS ISLAND is 18 miles in length east-north-east and west-south-west, with an irregular coast line, its breadth being from one to 3 miles. It is mountainous throughout, the greatest elevation being at the north-east end, where Mount Krikelos is 2,560 feet high; Mount Elias in the middle, is 2,175 feet, and Mount Korax at the south-west end, 1,890 feet high. The island is tolerably well cultivated, and there are places of some beauty in the narrow valleys which intersect the hills; the soil produces corn, oil, figs, tobacco, and cotton, all of good quality, and there is a manufactory of earthenware. There were three ancient towns, all on the north-western side of the island, and there are still vestiges of buildings, sculptures, pillars, &c., proving them to have been of some consequence in former days.

There are two good anchorages, Port Vathy and Kaloterion bay, both on the north-western side of the island, and three villages, besides the scattered houses on the beach at Port Vathy and St. Anna bay, containing altogether in 1907, 2,627 inhabitants.

Gravusa islet, at its west end, is separated from Antikaros, the south-eastern islet of the Heraklia and Kupho group, already alluded to, by a deep and clear passage, $2\frac{3}{4}$ miles wide.

Port Vathy, on the north-west side of Amorgos island, and Chart, 1,866.
Var. 4° 20' W. 4½ miles from Gravusa islet, is a safe little port, although the squalls in north-easterly gales are very heavy, but the holding ground is soft mud, and vessels ride in safety. There is no danger in entering, as the shore is steep to all round. The Austrian man-of-war *Spalato* was at Port Vathy in 1897, and her captain reports that his ship, 328 feet long, had not swinging room at single anchor. He also reports that two windmills in line make a good leading-mark in; the front mill being situated close to the shore, and the other in ruins standing on higher ground about 109 yards eastward of the former. The village of Katapola is on the south side and in 1896 had a population of 110; there are also blocks of houses on the north and east sides. On a hill south of the port and overlooking it, are some few remains of buildings; and on Kastri point about two miles south-west of the port, is a ruined fort.

LIGHT.—On Cape Elias, the northern entrance point of Port Vathy, at 66 yards from the shore, is a square stone tower, 34 feet high, from which is exhibited a *red fixed* light, elevated 132 feet above the sea, and visible seaward from a distance of 6 miles in clear weather. Lat. 36° 50' N.
Long. 25° 52' E.

Supplies.—A few provisions may be had, and a supply of good drinking water may be procured by boats from a fountain close to the Health-office.

Communication.—Greek steamers from Syra and adjacent islands call here. It is also a telegraph station.

Kastron (Khora), the principal village or town, stands on a hill about 1½ miles eastward of Port Vathy, and is clustered around an old ruined Venetian tower. It contained in 1896, a population of 997.

Kaloterion bay.—Nikuria island, $3\frac{8}{10}$ miles north-eastward of Cape Elias, is 2¼ miles in length, rather more than half a mile in extreme breadth, and at about one-third from its west end, rises abruptly 1,140 feet above the sea; its east end is connected to Amorgos by shallow ground. Lying somewhat obliquely to Amorgos, the island forms with it on the south, Kaloterion bay, where a vessel may anchor as convenient, southward of a little church, in 18 to 20 fathoms, good holding ground. In a sailing-vessel, it is almost necessary to have a fair wind to enter, as the bay is subject to calms, squalls, and variable winds.

The bay is nearly a mile wide between Atimo islet 276 feet high, and the shore of Amorgos; Atimo is separated from Nikuria on the north, by a narrow deep channel.

Shoal.—A small rocky patch with 5 fathoms on, and deep water round it, lies in the centre of the bay, and bears E.S.E. distant 8 cables from the south extreme of Atimo islet.

St. Anna bay, north-eastward of Nikuria island, is three-quarters of a mile deep, and nearly half a mile wide at its head, where there is a sandy beach, and a village consisting of a few scattered houses. The bay is open to the westward, and the water deep, but if necessary, a vessel might anchor in the north-eastern corner. There is a mooring buoy for small craft to make fast to. Lat. 36° 54' N.
Long. 25° 59' E.

The village or town of Langada, containing in 1896 a population of 647, is on the hill a mile eastward of the bay, and that of Tholari with 395 inhabitants, nearly a mile to the north-west.

Water.—A good stream of water runs into the bay.

Chart, 1,866.
Var. 4° 20' W

North coast.—From St. Anna bay, the coast to Cape Prosino, the eastern extreme of Amorgos, is high and bold, with deep water; between the bay and Cape Villakarda, the northern extreme of the island, there are two little inlets. Nearly 4 cables from the coast, and about $1\frac{1}{4}$ miles north-eastward of Cape Langada, is a large rock or islet 30 feet above water, with depths of 54 fathoms around it.

South-east coast.—The south-east coast of Amorgos consists principally of high cliffs, from which, during northerly gales, the wind, rushes down in heavy squalls, lashing the water into foam, and rendering it necessary for sailing-vessels passing to give this side of the island a wide berth; there is no anchorage or shelter. The surface of the island is broken into detached rocky peaks, with cultivated valleys between them.

At Panagia, a hill 1,080 feet high, midway along the south-east coast, and half a mile eastward of the village of Kastron, is a monastery, built in the mouth of a cavern on the face of the cliffs; it was built thus to secure it from the attacks of pirates, by whom these islands were formerly visited.

Gravusa islet.—At the western end of Amorgos, are several small islets or rocks; one of these, Gravusa, before alluded to, a mile in length north and south, is irregular in shape, and separated from the coast by a narrow passage which is yet further contracted by rocky ground round the south end of Gravusa. Temporary anchorage may be had on the west side of Gravusa, in from 10 to 13 fathoms, a quarter of a mile from the shore.

Cape Kalotari.—In the nook on the eastern side of Cape Kalotari, the western extreme of Amorgos, is a little port fit for coasters, having 10 fathoms water at the entrance, and 3 fathoms, three-quarters of a cable from the beach.

Lat. 36° 49' N.
Long. 25° 49' E.

Petalidi.—At about $2\frac{1}{2}$ miles north-eastward, is the islet of Petalidi with shoal water extending $1\frac{1}{2}$ cables westward; it shelters on the south, the small narrow port of Akrotiri, an inlet half a mile deep. A small vessel might anchor here, but a sailing-vessel would have difficulty in getting out.

Liadi islets.—Nearly 4 miles eastward of Cape Prosino (Krikelos), are the Liadi islets, four in number large and small, which extend nearly a mile north and south. The northern is the largest and 200 feet high, barren and unproductive; the southern is low and flat, and the shoal which connects them extends westward about a quarter of a mile. The Liadi islets belong to Greece.

Current.—The current between these islets and Amorgos, sets to the south-east, rarely less than three-quarters of a knot an hour, but stronger according to the force of the north-easterly wind.

For Kinaros island, belonging to Turkey, *see* page 326.

Chart, 2,753.

POLYKANDRO (PHOLEGANDROS).—The passage between this island and Polino (page 252), eastward of Miio, is 10 miles wide, clear and deep. Polykandro is 7 miles in length north-west and south-east, the northern part being about $1\frac{1}{2}$ miles in breadth, and 1,022 feet high, the southern part $2\frac{1}{4}$ miles in breadth, and 1,363 feet high; the island is contracted in the middle to a breadth of half a mile. The population in 1907 was 962. It is well cultivated, and produces corn, cotton, a little wine, rears sheep, and abounds in game. The modern town, containing, in 1896, a population of 590, is at the foot of the hill on which the ancient city stood, and about $1\frac{1}{2}$ miles north-westward from Port Karavostasi.

Port Karavostasi.—There is no good harbour in the island, only a small cove about 2 cables wide with a beach, called Port Karavostasi, at the eastern end of the island. In the vicinity of the cove, there are two or three little islets or rocks near the shore. Chart, 2,753.
Var. 4° 45' W.

LIGHT.—On the north entrance point of Port Karavostasi is erected an iron standard, 26 feet high, from which is exhibited a *red fixed* light, elevated 53 feet above the sea.

Communication.—Port Karavostasi is a telegraph station. Greek steamers call here from Syra and adjacent islands.

The coast of Polykandro is high and iron-bound, more especially the south-eastern part, with rocks scattered here and there close to the shore, but no off-lying dangers. A bay called Port Vathy on the south-western side of the island, is entirely open, with deep water until within half a mile of its head.

Adelphia rocks.—At $5\frac{1}{2}$ miles to the eastward of Polykandro, is the south-western end of Sikinos, and between the two, is a chain of rocks or islets. The western group, Adelphia rocks, 4 cables in length, consists of two islets connected by a reef; the eastern islet is 306 feet high, and the western 179 feet. Lat. 36° 37' N.
Long. 25° 0' E.

Shoal.—A shoal with $2\frac{1}{2}$ fathoms on, and deep water round it, lies N.W., 3 cables from a large rock at the northern point of the eastern Adelphia rock.

Kardiotissa, the central and largest islet of the chain, is nearly $1\frac{1}{4}$ miles in length in an east and west direction, and 505 feet high; the western end is bordered by a bank, extending one cable from the shore, with which exception the water is deep all round the islet; over the central point on the south coast is a church.

Kaloyeros and Karavos are united by a reef, and shoal water surrounds the islets, except on the south-east side; these two islets are the easternmost of the chain, and lie between Kardiotissa and Sikinos, $3\frac{1}{2}$ cables from the latter, with deep water between.

Shoal.—A shoal, with 23 feet water over it, lies nearly in mid-channel between Kardiotissa and Karavos, bearing W. $\frac{3}{4}$ S. distant $3\frac{1}{4}$ cables from the latter; it is indicated by a sudden change in the colour of the water, and extends about 220 yards in a north-east and south-westerly direction.

With the exception of the shoals mentioned, the water is deep between and around these islets, and a vessel may pass in mid-channel between them.

SIKINOS ISLAND is $7\frac{1}{2}$ miles in length in a north-easterly and south-westerly direction, with an average breadth of about 2 miles. The island in places is rocky and barren, but other parts produce wheat, figs, and wine. It has no port, but the skala or landing place is about mid-way on the south-eastern side, in a cove with a beach, where boats are hauled up.

LIGHT.—A *red fixed* light is shown at an elevation of 85 feet from the east point of Skala bay. Lat. 36° 40' N.
Long. 25° 9' E.

Sikinos village stands on an elevated ridge about an hour's walk from the skala, and contains the whole population of the island, amounting to 627 in 1907. The remains of the ancient *Sikinos*, consisting of some foundations and fragments, occupy an abrupt cliff westward of the ridge; a little farther in the same direction is a small temple of Apollo,

Chart, 2,753.
Var. 4° 40' W.

of bluish marble in good preservation, now used as a Greek church, and supposed to have been built about the 2nd or 3rd century B.C. The water all round the island at a distance of the quarter of a mile, is deep.

Telegraph.—The village of Sikinos is a telegraph station.

NIO (IOS) ISLAND, the reputed burial place of Homer, is separated from Sikinos by a clear and deep channel nearly 3 miles wide, is $9\frac{1}{2}$ miles in length in a north-north-west and south-south-east direction, with an average breadth of 4 miles. Nio is rocky and mountainous, with a granitic base and calcareous summits, its greatest elevation being 2,410 feet above the sea. It has a softer and more genial aspect than Polykandro or Sikinos, and produces cotton, oil, wine, and a small quantity of corn. The coast is indented with several bays, and on the western side is the port and town of Nio. The population of the island in 1907, was 2,090.

Plan on 2,753.

Port Nio (Ios), open to the southward, is nearly a mile deep and a quarter of a mile wide, shoaling from 20 fathoms water at the entrance to 5 fathoms at about a cable from the low shore at its head. The town, containing nearly all the inhabitants of the island, occupies part of a small hill about half a mile inland, rising from the east side at the head of the port; it is the site of the ancient city of which some foundations are still visible, and a zigzag paved road leads to it from the skala.

LIGHT.—A *white fixed* light is shown from a lighthouse on Cape Phanari, the western entrance point of Port Nio; it is visible in clear weather from a distance of 5 miles.

Shoals.—The eastern point of entrance to the port, Cape Exeris, is surrounded by rocks, which extend off more than half a cable, and a rock awash lies nearly a cable from the shore, a quarter of a mile to the north-west of Cape Phanari. (*See* view of entrance to Port Nio, on chart No. 2,753.)

Telegraph.—Port Nio is a telegraph station.

Lat. 36° 39' N.
Long. 25° 23' E.

Manganari bay.—Temporary anchorage may be found with all northerly winds in Manganari bay at the south end of Nio island, in from 10 to 15 fathoms water, over sand.

Coast.—A little islet or rock will be observed here and there close to the shore, but there are no off-lying dangers, and the coast may be approached to a reasonable distance.

The passage between Petaleitha-nisi at the northern end of Nio, and Avelos rock off the western end of Heraklia to the north eastward (*see* page 276), is $4\frac{1}{2}$ miles wide, clear and deep.

Anedro (Anhydron).—This little island is uninhabited, and lies in a central position between Nio, Amorgos, Santorin, Anaphi, and Stampalia, being 9 miles to the south-westward of Amorgos, the nearest land. Near its south-eastern end, is a conical rock, and to the south-west of the island is a rock awash.

Chart, 2,043.

SANTORIN (THERA).—This island in early times was inhabited by the Phœnicians, and known by the name of Calliste or *the Beautiful* isle; subsequently it was colonised under Theras from Sparta, after whom it was named. The modern name Santorin is derived from the Greeks. The island was originally circular, but it is now more in the shape of a crescent, Therasia island and Aspro islet on the west having been separated from it by an earthquake about B.C. 237. The half-moon

interior is the crater of a submarine volcano, and in places is upwards of 200 fathoms deep. In the middle of the crater are three islets thrown up by volcanic agency, of which, the largest, Neo Kaimeni or New Burnt isle, a mass of cinders and lava, now 438 feet above the sea, originally appeared in 1707, but was largely added to by the last eruption in 1866. On the north-east side of this islet, is Mikro Kaimeni or Little Burnt isle; on the south-west is Paleo Kaimeni or Old Burnt isle, 320 feet high, which emerged B.C. 197.*

Chart, 2,043.
Lat. 36° 27' N.
Long. 25° 23' E.
Var. 4° 35' W.

Santorin island extends 9 miles in a north and south direction; in no part is it more than 3 miles in breadth, which decreases near the north and south extremities to about 7 cables. The shores round the inner curve are the edges of the crater, and the dark rocky precipices varying in height from about 500 to 1,000 feet, have a dismal though interesting and picturesque appearance, and form a precipitous slope at an angle of 45°. It is along the edges of these precipices that the principal towns are built—Epanomeria at the north-western horn, Merovuli, and Thera the capital, in the centre of the curve. At Skaro near Merovuli on the overhanging cliffs, is a ruined Venetian fortress; the houses perched along the edges of the cliffs present a strange aspect, and most of them throughout the island are partly excavated in the porous rock.

The population in 1907, numbered 14,301; they are honest, industrious, and much attached to their volcanic island. There are several vessels and small craft belonging to the island, which find shelter in the creeks of Kaimeni. There are two landing places; one below the capital town of Thera, the other at Athenous bay, two miles further south, each with a steep ascent up the cliffs.

Aspect.—The northern half of the island is composed of volcanic material, iron, pumice, lava, &c.; and three remarkable mountains occupy the space between Merovuli and the village of Phinika, about a mile eastward of Epanomeria. In the southern part, and where the island is broadest, Mount Elias, a conical peak and the highest point of the island, rises 1,887 feet above the sea; on the east side of the mount, is a ridge called Sellada, by which Mount Elias is united to Messa Vuno (half mountain), probably so called from its being a little more than half the size of the former. Messa Vuno is a precipitous mass, on which are the remains of the ancient city of Thera, and it terminates at the south-eastern extreme of the island in Cape Messa Vuno.

Productions, &c.—The soil of Santorin, of decomposed pumice-stone, is fertile, and carefully cultivated, more especially in the south and south-eastern districts of the island, rendering it well worthy, even at this day, of its ancient name *Calliste*. It produces a little corn and cotton, and an abundance of wine of some strength, which with age becomes good and is exported. Water and firewood are scarce, and the inhabitants are at times obliged to procure the former from Nio or Amorgos.

Trade.—The exports, principally wine and pozzolana, were valued in 1907 at 30,257*l*; and the imports at 9,928*l*. In 1907 the island was visited by 678 vessels of which none were British.

Chart, No. 2,836*a*.

* The following are the dates of the known eruptions in this island, viz., B.C. 197, A.D. 46, 726, 1573, and 1707; the last continued until 1713. All these took place in the centre of the crater, where the cone is now formed by the Kaimeni or Burnt islets. At the end of January, 1866, signs of a new eruption were observed; on the 1st of February stones were thrown up, and from this date the new volcano went on increasing, and by the end of the month was about 100 feet above water. The first great eruption occurred at 10 h. a.m. on the 20th February, followed on the 21st and 22nd by similar eruptions. From this date, till the autumn of 1870, these phenomena continued in unceasing succession. Enormous masses of lava rose above the sea, surpassing the size of those projected in 1707. In January, 1868, mount George still without a crater, but under continuous eruptions, formed a regular cone 325 feet high, to the south of Neo Kaimeni. At the end of August, 1870, these phenomena ceased, but smoke was still issuing from the crater late in 1874. (See Murray's Handbook for Greece, &c.)

Chart, 2,043.
Var. 4° 35' W.

Consul.—A British Consular Agent resides at Thera.

Communication.—Steamers from Syra and the principal islands of the Cyclades, call at Thera. There is telegraphic communication with the rest of the world, the telegraph office being at the village of Epanomeria or Oia.

Lat. 36° 27' N.
Long. 25° 23' E.

LIGHT.—A *red fixed* light is exhibited at an elevation of 378 feet from a square masonry tower, 26 feet high, at Epanomeria on the south-west point of the northern horn of Santorin; it is visible from a distance of 8 miles, from the bearing of N. 25° W. (leading over the centre of Anchorage bank) through north, to S. 66° W. Between the bearings of (approximately) N. 73° E. and S. 73° E. the light may at times appear *quick-flashing*, on account of the sails of a windmill (when working), situated about 21 yards westward of the lighthouse. Through about 6° of this sector, it is partially obscured by the mill when within 3½ miles from the light.

Therasia.—On the west side of the crater, is the island of Therasia, and the islet of Aspro, each separated from Santorin by the eruption B.C. 237. Therasia is rather more than 3 miles in length north and south, about a mile in breadth, and the eastern coast rises nearly perpendicularly to about the height of 936 feet, agreeing exactly in strata and elevation with that of Thera opposite; but the land slopes rapidly to the west, where the shore is comparatively low. The soil produces cotton, and grapes. There are four villages on the island, the largest, Manola, with a population in 1896 of 398, being situated on top of the cliffs on the east coast. The population of the whole island in 1896, amounted to 855.

The island is separated from the north-western end of Santorin by a passage 8½ cables wide; but its northern part is bordered by shallow rocky ground, and a rocky shoal with less than 3 feet water on it, lies 3 cables eastward of Cape Riva, the north extreme of Therasia island; a reef also extends from Tino point, the next point south-eastward from Cape Riva. The north and west coasts of the northern end of Santorin are also bordered by shallow water, but in mid-channel between the two islands the depth is 195 fathoms. (See view of the north entrance to the crater on chart No. 2,043.)

Lat. 36° 24' N.
Long. 25° 20' E.

Mansell reef.—The little islet or rock of Kimina lies close off the south-western point of Therasia, and at three-quarters of a mile S. ½ W. of Kimina is Mansell reef, the crown of which is about 1½ cables in diameter, with 9 feet water on it. There are 3 and 4 fathoms close round the reef, a patch of 5 fathoms at 1½ cables south of it, and 23 and 25 fathoms at half a mile westward; a little more than a cable eastward of the reef, the water deepens to 125 fathoms.

A vessel should give this danger a wide berth, and not approach its western side into less than 15 fathoms water. The north extreme of Neo Kaimeni, well open of Cape Tripiti (the south-east extreme of Therasia) N. 79° E., leads southward of Mansell reef.

Lat. 36° 23' N.
Long. 25° 22' E.

Aspro islet, so called from the white appearance of its summit, is on the inner edge of the bank fronting the southern entrance to Santorin, and nearly midway between Therasia and Cape Akrotirion; the southern horn of Santorin. Aspro is less than 4 cables in length, about 300 feet high, and surrounded by rocky shoal ground extending 2 cables northward, and 3 cables to the southward. A patch with 2½ fathoms on it, also lies nearly 2 cables south-east of the eastern extremity of Aspro islet. The islet being on the brink

of the crater, the water between it and Therasia and towards the Kaimeni is deep; but the bank from the islet to Cape Akrotirion has from 6 to 12 fathoms water on it, sand, or sand and weeds. See view of south entrance to the crater on chart No. 2,043.

Chart, 2,043.
Var. 4° 35' W.

Aspro islet anchorage.—Temporary anchorage during fine weather, will be found about 3 cables south-west of Aspro islet in 9 or 10 fathoms water, sand and weeds.

Cape Akrotirion, the south-western extreme of Santorin, is bordered by a rocky bank which extends off about a cable; inside the crater, at about $1\frac{1}{2}$ miles north-eastward of the cape, are some rocks covered and uncovered, extending nearly 2 cables from the shore, but they are out of the track of vessels.

The land immediately over the steep cliffs of the cape, is 373 feet high, and rises at $1\frac{1}{2}$ miles eastward, to a hill 600 feet above the sea.

LIGHT.—A *white flashing light every thirty seconds* is shown at an elevation of 321 feet from a square tower, 380 yards eastward of the extreme of Cape Akrotirion; it should be visible in clear weather from a distance of 22 miles. In 1905 the period of the light was reported to be from *thirteen to twenty-six seconds*.

Anchorage bank.—Vessels may bring up east of Mikro Kaimeni, on Anchorage bank, in $5\frac{1}{2}$ fathoms, but its area is small, being only about 340 yards across, and steep on all sides, falling rapidly to 30 and 50 fathoms. The bottom is rock and can generally be seen; the anchor should be dropped if possible well in on the bank, as the ground is not good for holding, and the water deepens suddenly.

Anchoring marks.—The windmill situated on the west side of the town of Akrotirion, Santorin island, in line with the south-east extreme of Neo Kaimeni bearing S. 19° W.; the north extreme of Mikro Kaimeni in line with the southern of three windmills at Manola, Therasia, N. 59° W.; and the southern slope of the hill north of the crater of Neo Kaimeni in line with the boat passage separating the two islands, about S. 86° W., mark the centre of the bank. The two northern of the three windmills on Therasia are close together.

At night, the limiting line of the Epanomeria light, bearing N. 25° W., passes over the centre of Anchorage bank. During strong winds it will be necessary to keep the lead over the side, and to have marks ashore in case of dragging the anchor.

Landing.—The skala or landing place under Thera, is built on a small natural platform sufficiently large to contain a few houses; at the back, is a steep cliff, in which is cut a winding pathway to the town above. Merchant vessels are secured at the skala by chains to bollards cut in the cliff for the purpose, but there is no anchorage. There is a mooring buoy for small vessels about half a cable from the shore at Thera.

Port Megalo, is the creek formed between Neo Kaimeni and Mikro Kaimeni eastward of it; it is open to the north, and extends southward about one-third of a mile, being from 70 to 80 yards wide in the narrowest part, with from 7 to 15 fathoms water. As many as twenty vessels consisting of brigs and small craft, lie here at times secured to the shore where there are bollards for the purpose. Vessels are also secured in the other creeks of the Kaimeni islets.

Lat. 36° 24' N.
Long. 25° 24' E.

A boat passage about 10 feet wide, and 2 feet deep, leads from the eastward into Port Megalo, south of Mikro Kaimeni. Sulphurous

Chart, 2,043.
Var. 4° 35' W.

water emitted from a spring at a temperature of 125°, easily distinguished by its colour, and of a strong odour, escapes through this passage; if it be desired to clean the copper, a vessel can be secured by hawsers where the water is discoloured, and in a few days all foreign substances will drop off. Summer is the best time for visiting the place for this purpose; in winter the winds are fresh and strong in squalls. It would be well to examine the locality prior to entering it, in case any alteration should have taken place.

A vessel may also enter Port Megalo for the same purpose, anchor in 10 fathoms, and secure to bollards on either side with bow and stern-fasts, which is the safest and most effectual way.

The prevailing winds in the summer are strong from the north-east, and in winter from the southward.

South coast.—Anchorage.—In the bay on the south coast of Santorin, and about a mile south-eastward of Cape Akrotirion, there is excellent anchorage in 7 or 8 fathoms water, sand and weeds, sheltered from all northerly winds, and round eastward to E.S.E. At the east point of the bay, rocks above water extend a cable from the shore, with sunken dangers round them.

Lat. 36° 20' N.
Long. 25° 27' E.

Cape Exomiti.—Between the rocky point just mentioned and cape Exomiti 3 miles to the eastward, the coast forms a bay, in the centre of which at about 4 cables from the shore, there is similar anchorage to that just alluded to. Cape Exomiti, the southern extreme of Santorin, is a low point at the foot of Mount Platanimos, a limestone hill, on the south-east side of which are many ancient tombs cut in the rock. The cape is surrounded by rocks and shallow water which extend southward about 1½ cables, and in continuation of the rocks to the westward are the remains of ancient moles. These remains are under water, extend westward about 4 cables, and enclose an area of about the same extent, with from 2 to 4 fathoms water. From the extremity of the north-western mole, the shore westward is skirted by rocks with shoal water.

Cape Messa Vuno.—From Cape Exomiti, a low shore trends north-eastward 2¼ miles to the high rugged steep cliffs of Messa Vuno, the termination of which, is the cape of the same name, and the south-eastern extreme of the island. At 2 miles northward of the cliffs, is Kamari, a low rounded point, and about half a mile to north-west of the point is a monolith 100 feet high. As this monolith has been used for the construction of breakwaters at Kamari its height has probably been reduced.

Anchorage.—There is anchorage in 9 fathoms with off-shore winds, about three-quarters of a mile north-eastward of Cape Exomiti, the latter bearing W. ¾ S.; also in the same depth of water, about half a mile southward of Kamari point.

Coast.—From the latter point, the coast trends north-west and westward about 8 miles to the north-western extreme of the island. To the northward of Kamari point, the 5-fathoms line of soundings curves off half a mile, and the north coast is bordered by a bank, and should not be approached too closely.

Harbour works.—A harbour for small vessels about half a mile to the northward of Kamari point, formed by two breakwaters, was commenced in 1905, but has since been abandoned.

Kolumbos bank.—At 3½ miles N.E. ¼ E. from Cape Kolumbos, the north-eastern elbow of Santorin, is a bank of cinders with 10

fathoms water on it, about 2 cables in diameter within the 20-fathoms line, being the remains of a volcanic island, which first appeared during the earthquakes at Santorin in 1649. Chart, 2,043.
Var. 4° 25' W.

Cristiani islets are about $9\frac{1}{2}$ miles S.W. by W. nearly, from Cape Akrotirion, the south-western point of Santorin. Cristiani, the larger and northern islet, nearly a mile in length north and south, and two-thirds of a mile in greatest breadth, has a peak at the south-western end, 914 feet high; its shores are rugged and bold, and with exception of some scattered rocks close inshore on the eastern side, the water is deep. Plan on 2,043.

The southern islet named Askania, is $4\frac{1}{2}$ cables in length, 470 feet high, skirted all round by rocks, and separated from the northern islet by a passage about a third of a mile wide, but there are rocks on either side, and nearly midway is a $2\frac{1}{2}$ -fathoms shoal.

Eskhati rock.—S.E. $\frac{1}{2}$ S., 9 cables from Askania, is Eskhati rock, less than a cable in length, and 45 feet high; rocks lie close to its north-east and south-west ends, but the water a cable from it, is deep. Lat. 36° 13' N.
Long. 25° 15' E.

ANAPHI (or *Naphio*), about $12\frac{1}{2}$ miles eastward of Santorin, is 6 miles in length east and west, $3\frac{1}{2}$ miles in greatest breadth, and 1,530 feet high. Its hills are barren and naked, nor are the valleys and plains much more fruitful and they are but little cultivated. A small quantity of wheat, oil, honey, and wax are the only products. The island contains some excellent springs, and abounds now as of old in red-legged partridges. Anaphi was celebrated of old for its temple of Apollo Ægletes, and at the eastern end of the island there were remains of this temple in the walls of a Greek monastery occupying the same site, but they were destroyed by an earthquake in 1888. The modern village is near the south-western end of the island, and, in 1907, contained 579 inhabitants. Charts, Nos. 872
2,836a.

Telegraph.—The village of Anaphi is a telegraph station.

Coast.—The coast is skirted here and there by rocks covered and uncovered, and near the south side are the two little islets or rocks of Agios Nikolo and Rukana, 12 and 3 feet high respectively, the latter being 3 miles from Kavo Kalamos, the eastern end of the island. At $1\frac{1}{2}$ miles southward of Rukana, are the two little islets or rocks of Ephtanah (Phlini), 50 and 60 feet high, with rocks above water on the east side of the eastern islet. Between the Ephtanah and the coast there are from 26 to 6 fathoms water, and here, under favourable circumstances or in case of necessity, a vessel will find anchorage. The little islet of Pakhia, 740 feet high, lies S.S.W. about 4 miles from the east end of Anaphi, and $1\frac{3}{4}$ miles eastward of Pakhia is the islet of Makra, 420 feet high, both on the south-eastern part of the bank which surrounds Anaphi.

Makra rock.—A quarter of a mile from the north-east extremity of Makra islet, is a rock 3 feet high, and about one-third of a mile eastward of it, is a patch with 5 fathoms water on it called Makra rock.

CHAPTER IX.

COAST OF ASIA MINOR FROM CAPE ALUPO TO SAMOS STRAIT,
WITH THE SOUTHERN SPORADES ISLANDS.*

Chart, 1,667.
Lat. 36° 0' N.
Long. 28° 0' E.
Var. 3° 45' W.

RHODES ISLAND.—This island, the most eastern of the Ægean sea, and a pashalic of Turkey, is 42 miles in length in a north-east and south-west direction, with an extreme breadth near the middle of about 17 miles, narrowing towards the ends. The island is mountainous, with spurs in various directions, the greatest elevations being in the central part, where, about 4 miles from the western coast, Mount Attayaro (ancient *Atabyrius*) is 4,068 feet above the sea; about 6 miles south-westward of this mountain, and within 1½ miles of the coast, is Mount Akramytis, 2,706 feet high. These lofty heights, form a mountain barrier between the north-west and south-eastern sides of the island.

Mount Skathi, 9 miles from the southern end of the island, is 1,860 feet high; whilst Mount Kumuli, 8 miles from its northern end, is 1,366 feet high. The island is considered to be nearly equally divided and mountains and plains; from the lofty summits of Attayaro towards the town of Rhodes to the north-east, the heights decrease, and the plains expand as the hills diminish. This district, which is cultivated on the sides of the hills and on the level land near the sea, produces wheat, and with better cultivation would yield an abundant crop.

Productions.—In the level land along the coast, numerous streams irrigate the ground, which produces corn, figs, olives, lemons, oranges, melons and other fruits. The richest part of the island is a narrow belt of plain along the north-western coast, from the village of Kalavarda to the town of Rhodes. The eastern side of the island is not generally so fertile as the north-western. Marble is quarried in several parts of the island; coral, with sponges, and excellent fish are found in the surrounding sea. The only beasts of burden are mules and donkeys, there being but few horses.

The minerals known to exist in the island are antimony, silver, lead, emery, manganese, copper, and calamine, but they are not worked.

Red-legged partridges and hares are met with on the hills; also woodcocks from November to February.

Population.—In addition to the town of Rhodes, the island contains about forty-four thinly inhabited villages, the largest containing 1,600 inhabitants. The population of the whole island was estimated in 1907, to be about 30,000, of whom 6,000 were Turks, 3,000 Jews, and the remainder Greeks; of this number, about 10,000 dwell in the town of Rhodes and its suburbs.

Climate.—Rhodes possesses an agreeable and healthy climate; during the summer it is never very hot, as a steady north-westerly wind prevails at that season.

Winds.—During summer, the prevailing wind is north-westerly, blowing almost with the regularity of a trade. Vessels at this season may anchor on the eastern shore of the island with safety.

Charts, Nos. 2,606, 2,836a, 872.

* The south coast of Asia Minor eastward of cape Alupo is described in Vol. II. of *Mediterranean Pilot*.

In winter, southerly winds prevail, bringing with them cloudy weather and thick haze; during this season, great caution is required in navigating the channel between Rhodes and Asia Minor.

Chart, 1,667.
Var. 3° 45' W.

KUM BURNU or MOLINO, the north-east extreme of Rhodes island, is low and sandy, but steep-to; it has a number of windmills on it. The channel between this cape and the coast of Asia Minor, nearly 10 miles wide, is deep and clear of danger. The current generally sets westward.

Plan on 1,667.
Lat. 36° 27' N.
Long. 28° 16' E.

Landing may be effected in ordinary weather on either side of Kum burnu, and also in Trianda bay about 2 miles to the south-westward.

LIGHT.—A *red fixed* light is shown at an elevation of 53 feet from a mast over white house, about 280 yards from the extremity of Kum burnu; it is visible in clear weather from a distance of 6 miles.

Rhodes town, about three-quarters of a mile southward of Kum burnu, has an imposing appearance from the sea. It is built in the form of an amphitheatre, on ground rising gently from the water's edge and is strongly fortified, having a moated castle of great size and strength, and is surrounded by walls flanked with towers. The works were constructed by the knights of St. John, and bear evidence of the same skill as was afterwards exhibited in the fortifications of Malta. See view on chart No. 1,667.

A highly ornamented Gothic gateway leads from the quay to the town, but on entering, the interior disappoints the expectations raised by the exterior. The streets are narrow and winding, but clean, and mean houses have generally replaced the substantial buildings of the knights. Many of the latter were destroyed by the explosion of a powder magazine in November 1856; two years afterwards an earthquake completed the destruction. The massive houses in the street of the knights withstood the shock, and, with the hospital and city walls, are now the only remains of the mediæval portion of the city.

Colonna rock, lying about 3½ cables south-eastward of Kum burnu, and nearly a cable northward of Lazaretto point at the entrance of Tershaneh harbour, received its name from the shaft of a column which formerly stood on it as a beacon. The rock, awash, rises from the middle of a reef, with foul ground extending nearly three-quarters of a cable northward, and about half a cable eastward; between the reef and Lazaretto point there are only 8 feet water.

HARBOURS.—The town of Rhodes has two harbours, both artificial, and neither of them fit for large ships.

Tershaneh, the northern harbour—Port Mandraki of the Greeks, and Porto delle Galeré of the knights—is protected from the eastward by a mole of ancient construction extending from the shore 500 yards to the north, with the tower of St. Elmo on its extremity, close to which is the site of the colossus of Rhodes. The two transverse piers at the entrance are much out of repair, and the sea breaks over them; the harbour has been allowed to silt up, and its north-eastern corner is very shallow. It is open to the north, and the passage in between the ends of the piers, is very narrow; between them, there are only 8 feet water, though farther in, the depth is 18 feet.

On the western shore of the harbour, is a stone quay, alongside of which is however only about a foot of water; behind the quay is a broad promenade.

Plan on 1,667.
Var. 3° 45' W.

The southern harbour is protected from the eastward by a mole 300 yards long, extending from the shore at the eastern angle of the city in a northerly direction, and having on its extremity the round tower of St. Angelo, 74 feet high; rocky foul ground extends two-thirds of a cable northward of this mole. A transverse mole, on the extremity of which are the remains of Arab's tower,* extends from the northern angle of the city eastward towards the tower of St. Angelo; the harbour thus formed is nearly 2 cables deep, and a little more than a cable wide at the entrance, with from 22 feet water in the entrance to 10 feet near the head, over sandy bottom.

The harbour is open to the north, but is considered safe as the wind seldom blows from that quarter, and does not send in much sea. Small vessels haul within the piers on the western side of the harbour, but the water is very shallow in this space; larger vessels moor with a stern-fast to the eastern mole, which, if the wind sets in from the northward, they are obliged to slack up. Vessels lie here quite secure in S.E. gales, which is the wind most dreaded on this coast, as it raises a very heavy sea.

Lat. 36° 26' N.
Long. 28° 16' E.

LIGHTS.—From a white tower in Fort St. Elmo, at an elevation of 82 feet above the sea, is exhibited a *flashing white* light, the *flashes* occurring *every minute*, visible in clear weather from a distance of 14 miles. The light was reported to be irregular in 1904.

A *white* and *red fixed* light is exhibited at an elevation of 44 feet from a white iron support over a white house with a red roof at the foot of St. Angelo tower. It is visible in clear weather from distances of 8 and 4 miles in the *white* and *green* sectors respectively. For sectors see Light List, part V., and Chart.

Lat. 36° 27' N.
Long. 28° 17' E.

Khatar rocks.—At nearly a quarter of a mile S.E. of the tower of St. Angelo, is the termination of a ridge of black rocks, projecting from the shore in a northerly direction; from the outer end, a shoal extends a quarter of a mile north-eastward, having on its extreme, Khatar rocks, with only 10 feet water over them, and 6 fathoms close to their outer edge.

To pass northward of Khatar rocks, keep the mosque (standing a little inside of the pier on Lazaretto point) well open northward of the tower of St. Elmo, about N. 74° W., or the fourth windmill open northward of Lazaretto point, N. 64° W.

Directions.—At night, in steering for the anchorage, keep the light on St. Elmo bearing westward of W. by N., until the light on Kum burnu bears N.W. by W., or until St. Angelo light changes from *white* to *green*; a vessel will then be near the summer anchorage. In leaving at night, St. Elmo light should be kept westward of a W. by N. bearing, until outside Khatar rocks.

Anchorage.—During the summer, vessels may anchor in from 12 to 18 fathoms water, sandy bottom, with the tower of St. Elmo bearing W. by N. or W.N.W., distant from 2 to 3 cables; in this season, no danger is to be apprehended from S.E. winds. In the winter season, a vessel should not anchor inside a depth of 25 to 30 fathoms, with the tower of St. Elmo W.S.W. distant half a mile; from this position, should the wind blow in, a sailing vessel would be able to proceed to sea on either tack. The bottom in general is loose sand, though here and there are spots of better holding ground.

When the wind is strong from the eastward, vessels anchor in Trianda bay, west of Kum burnu, or seek shelter in Marmarice harbour.

Charts, Nos. 2,606, 2,836a, 872.

* Arab's tower, formerly a most conspicuous object from the sea, was destroyed by an earthquake in 1864; these are not uncommon, and are often very destructive.

Current.—The current in the roadstead, generally sets to the northward, but occasionally it will run south-eastward. Plan on 1,667.
Var. 3° 45' W.

Trade.—The chief articles of export are fruit, sesame seed, leather, wine and spirits, dried fruits, and beeswax: the imports being cotton and woollen goods, cereals and flour, sugar, hardware, tobacco, cattle, coffee, timber, hides and rice. The value of the exports amounted in 1906 to 76,650*l.*, and imports to about 163,800*l.*

Shipping.—In 1906, 649 steam vessels of 345,315 tons, and 2,837 sailing vessels of 101,447 tons, entered the port of Rhodes; of these 7 steam vessels of 3,941 tons were British.

Consul.—A British Vice-Consul resides here.

The landing place is on the north-west side of Tershaneh harbour.

Coal.—There is usually about 150 tons of Welsh coal in stock, and 100 tons of Heraklea coal, but if required notice must be given in advance.

Provisions are obtainable at moderate prices.

Water may be obtained from a fountain near the landing place in the southern harbour; and in Tershaneh harbour, but the supply is limited, and during the summer it sometimes fails entirely.

Shipbuilding and repairs.—Small wooden vessels for service in the Levant are built here, and uncoppered wooden vessels can be repaired; there are no facilities for repairs to iron vessels.

Communication.—Rhodes is connected by telegraph cables with Marmarice and Crete, thence to Egypt and Europe. Messages can consequently be sent to all parts of the world.

Messageries Maritimes steamers call here monthly on their way from Constantinople, and Smyrna to Beirut; Russian steamers occasionally call on their passage to and from Odessa and Beirut. A Turkish steamer runs fortnightly to Saloniki, Cyprus and Alexandria; and a Greek steamer connects with Smyrna, Khios, Lero and Alexandria.

SOUTH-EAST COAST.—From the town of Rhodes, the coast trends southward $3\frac{1}{4}$ miles to Cape Vudhi, being low and rocky, but free from danger 2 cables off. Cape Ladhiko, $4\frac{1}{4}$ miles to the southward of Cape Vudhi, is a high bold cliff rising to a hill 540 feet in height; between the capes, the land falls back westward, forming Kalitheas bay, which is rather less than a mile deep; the northern part of the bay is clear of danger at a quarter of a mile from the shore. Chart, 1,667.

In the southern part of Kalitheas bay, a rocky patch with 2 to 3 fathoms on it, lies nearly two-thirds of a mile N.N.E. from the southern point of Kalitheas bay, half a mile northward of Cape Ladhiko. Lat. 36° 20' N.
Long. 28° 16' E.

From Cape Ladhiko to Cape Archangelo, a distance of 9 miles S.S.W. $\frac{1}{2}$ W., the coast is nearly straight, having only a few slight indentations; the northernmost of these, named Aphandos bay, between Cape Ladhiko and Cape Vahyah, which is mainly low and sandy, is free of danger except a small 5-fathoms patch half a mile off the beach, and $1\frac{1}{4}$ miles N.N.E. of Cape Vahyah. Southward of Cape Vahyah, the coast is low and cliffy with rocks, but clear of danger a short distance off.

Water.—At 3 miles from the latter cape, and three-quarters of a mile northward of two small islets, is a stream of good water.

Chart, 1,667.
Var. $3^{\circ} 45'$ W.

Viglika bay is the southern portion of a deep indentation in the coast between Cape Archangelo and Cape Agios Milianos; it is open to the north-eastward, but is said to be quite secure in the winter from those winds, which then seldom blow, and send home but little sea. The best anchorage is in the south-western corner, in from 19 to 7 fathoms, mud, well sheltered from the S.E. The shores of this bay are composed of smooth rounded pebbles, which are much used in the island for pavements and roads, and are frequently exported to Smyrna and other places for the same purpose.

Water.—In the northern part of Viglika bay, is a ruined castle on a projecting rocky eminence, and near it is a good fountain of water; there is also a considerable stream near the centre of the bay during the winter, but in summer it dries up.

Plan, 1,667.

PORT LINDOS at about half a mile southward of Cape Agios Milianos, is about $1\frac{1}{2}$ cables wide at the entrance, opens out within to 3 cables in width, and is $3\frac{1}{2}$ cables deep; it forms a snug little anchorage in from 6 to 4 fathoms water, well sheltered from all winds but those from E.S.E.

In former times when this place had a trade of its own, the vessels belonging to it used to winter in Viglika bay.

The town of Lindos, half in ruins, lies on the northern and western sides of a rocky hill rising from the southern shore of the port; it was once celebrated for a temple of Minerva, of which only the foundations are left; there is also a portion of a theatre that has been hewn out of the rock.

Shoal.—At the entrance of the northern bight, is a narrow shoal nearly a cable in length, with $2\frac{1}{2}$ fathoms on it.

Chart, 1,667.
Lat. $36^{\circ} 4'$ N.
Long. $28^{\circ} 8'$ E.

Pendi nisia shoal.—A small islet with foul ground around called Pendi nisia, lies about $1\frac{1}{4}$ miles southward of Port Lindos, and nearly in the middle of the entrance of a rocky bay; a rocky patch with $5\frac{1}{2}$ fathoms on it, and very deep water close to, bears S.E. by E. $\frac{3}{4}$ E. distant three-quarters of a mile from the islet. Mount Lindos, about $2\frac{1}{2}$ miles north-westward of the cape of the same name, in line with Pendi nisia, leads over the patch.

CAPE LINDOS or LARDOS, 3 miles from Cape Agios Milianos, has a ruined tower on its summit, and three small islets lie about a third of a mile northward of it.

Paximada rock.—At a little more than 2 miles S. $\frac{1}{4}$ E. from Cape Lindos, is Paximada rock, high and steep to all round.

Lardos bay.—The coast turns sharply to the westward for 2 miles from Cape Lindos, and then curves northward and round southward, forming Lardos bay, where from a depth of 20 fathoms, at a long half mile from the shore, the water shoals gradually in, but the bay is open from S.W. to S.E.

Coast.—From the western part of Lardos bay, the coast trends south-westward to Cape Vigli, distant $12\frac{1}{2}$ miles, and then gradually round westward for 5 miles to Cape Praso nisi.

Shoals.—The whole of this shore is clear of danger, excepting a rock with less than 6 feet water over it, lying S. by W. $\frac{1}{4}$ W. a quarter of a mile from Cape Vigli: and a small patch of $2\frac{1}{2}$ fathoms, E. by S. $\frac{1}{2}$ S.,

two-thirds of a mile nearly from Cape Katabia, and $2\frac{1}{2}$ miles from the south-eastern part of Cape Praso nisi. To avoid the shoal keep the western extreme of the latter cape open of the point eastward of it. Chart, 1,667.
Var. $3^{\circ} 45'$ W.

Khina rocks, lying E. by S. $\frac{1}{4}$ S. $7\frac{1}{2}$ miles from Cape Praso nisi, are two in number and steep to all round, but being very low, are dangerous at night.

CAPE PRASO NISI, the south extreme of Rhodes island, is a rocky irregular peninsula connected to the main by a low sandy isthmus, which causes it to be often mistaken for an island.

LIGHT.—From a lighthouse 164 yards within the extremity of Cape Praso nisi, at an elevation of 213 feet above the sea, a *flashing* light showing *red* and *white flashes* alternately *every thirty seconds*, with total eclipses, is exhibited; the light is visible in clear weather from a distance of 21 miles. It was reported to be irregular in 1907.

Rocky banks.—A rocky bank with depths of from 16 to 46 fathoms is reported to be situated about 10 miles to the south-eastward of Cape Praso nisi.

A deep rocky bank extends from Cape Praso nisi in a S.W. by S. direction for a distance of 8 miles; the body of the bank has a depth of from 50 to 70 fathoms, coral, sand, and gravel, deepening to 90 fathoms at the outer end, when it suddenly increases to 150 fathoms over yellow mud.

Current, Caution.—A current sets over this bank in a north-westerly direction, at the rate of three-quarters to $1\frac{1}{2}$ knots an hour, causing during N.W. winds a hollow cross sea, which is dangerous to deeply laden small vessels.

South-west coast.—From Cape Praso nisi, the coast trends north-westward 4 miles to Cape Karavolos, then northward 10 miles, when it takes a north-westerly direction to Cape Monolithos which bears nearly North $12\frac{1}{2}$ miles from Cape Karavolos, forming between them the bay of Palatshah or Apolakia, about 3 miles deep.

There are two rocky islets lying in the vicinity of Cape Karavolos; one of the same name as the cape, bears W. by S. three-quarters of a mile from it, the other, Octonya nisi, having rocky ground running off its south-western end, lies N. $\frac{1}{2}$ W. 3 miles from the cape. With the exception of these islets, the bay of Apolakia is clear of danger, with soundings gradually decreasing towards the beach, from about 60 fathoms.

KHALKIA ISLAND, the south-western point of which bears about N.W. by W. $\frac{1}{2}$ W. distant $8\frac{1}{2}$ miles from Cape Monolithos, is the most western of a group of islands and rocks extending westward from between Capes Monolithos and Kopria, the salient points on the north-west coast of Rhodes island, which are nearly $9\frac{1}{2}$ miles apart. Lat. $36^{\circ} 12'$ N.
Long. $27^{\circ} 33'$ E.

Khalkia island, $5\frac{1}{4}$ miles in length, and $1\frac{1}{2}$ miles in breadth, is high, rugged, and barren, with a peak one-third from its eastern end, 1,954 feet above the sea. The population is about 2,500, mostly sponge fishers.

Emporio bay.—On Khalkia island, are two villages inhabited by sponge divers and their families, and it possesses a small harbour at the south-eastern part named Emporio bay, protected from the eastward by an island in the middle of the entrance, having on both sides a passage with deep water. There are 20 fathoms at the entrance, decreasing to 7 fathoms off the landing place, where small vessels lie quite secure.

Chart, 1,667.
Var. 3° 45' W.

The harbour is difficult of access during westerly winds, which rush down in squalls from the high hills with which it is surrounded.

Communication.—Steamers of the Pantaleon Company call weekly from Rhodes and Smyrna.

Lat. 36° 17' N.
Long. 27° 45' E.

Alimnia island, the next in extent to Khalkia, and $3\frac{1}{4}$ miles north-eastward of that island, is 900 feet high, and possesses a harbour on the south-western side, which although very deep, has anchorage in 8 to 10 fathoms, off a small village at its head. A shoal with 3 fathoms water on it, extends 3 cables north-eastward from the eastern point of the entrance; a rock with a sunken one outside it, lies close to the western point of entrance.

Tragusa islet.—Between Khalkia and Alimnia are several islets, and nearly half-way between them and the coast of Rhodes are three others; they are all bold-to excepting Tragusa, lying $1\frac{1}{4}$ miles southward of Alimnia, and which has a patch of rocks awash with shoal water round it, $3\frac{1}{2}$ cables off its southern extreme.

A rock awash, with shoal water around it, also lies about a quarter of a mile westward of the little islet of Nisaki, the second islet from the southward.

Supplies.—Neither water, nor supplies of any kind, are to be obtained at any of this group of islands.

North-west coast.—Between Cape Monolithos and Cape Kopria, the coast of Rhodes is high and rocky, but steep-to; on the high land above Cape Copria, are the ruins of an old castle, and near the shore midway between the capes, are two round towers $1\frac{1}{4}$ miles apart. The coast is backed at $1\frac{1}{2}$ miles, and about 4 miles inland, by the lofty heights of Akramytis and Attayaro, before mentioned.

From Cape Kopria to Kum burnu, a distance of about 23 miles, the shore is a sandy beach, with depths of 5 fathoms, from a quarter to half a mile off; it maintains the latter distance for several miles from a point about $5\frac{1}{2}$ miles north-eastward of Cape Kopria, and within the shore, is a narrow belt of plain, well cultivated.

During the summer the wind blows strong along this part of the coast from W.N.W. with but little interruption.

Chart, 2,836a.
Var. 4° W.

Sterneck deep.—Almost the greatest depths of the Mediterranean have been found 20 miles from the south-east coast of Rhodes island, and the above name has been given to a depression of 2,113 fathoms, yellow clay bottom, situated S.S.E. $\frac{3}{4}$ E. distant 27 miles from Kum burnu, the north-east extremity of Rhodes island.

Cyclades.—The islands of Saria, Scarpanto, and Kaso or Caxo are the southern of the ancient *Cyclades*; they lie midway between Rhodes and Crete, and have on either side wide and deep channels leading into the south-eastern part of the Archipelago. The inhabitants are principally Greeks, but the island belongs to the Ottoman empire.

Chart, 2,824.
Lat. 35° 54' N.
Long. 27° 15' E.

Saria island.—Cape Paraspori, the northern extreme of Saria island, the most northern of the group, is distant 26 miles W. by N. nearly from Cape Praso nisi, the southern extreme of Rhodes island, the channel between being known as Scarpanto strait. Saria island is nearly $4\frac{1}{2}$ miles in length in a north and south direction, and from three-quarters of a mile to 2 miles in breadth; the southern part rises to a height of 1,853 feet.

The eastern coast of the island is composed of very high cliffs, with deep water close in; there is one small break in this wall, about a mile from the north-eastern point, which is a little sandy bay surrounded by ancient ruins named Palatia. The western side of the island is not so cliffy as the eastern, and has several indentations, but the deep water is close in to the shore.

Chart, 2,824.
Var. 4° W.

SCARPANTO ISLAND (ancient *Carpathos*) is only separated from Saria by a shallow channel about 100 yards wide, which on the western side suddenly opens out, forming a deep-water bay upwards of half a mile in breadth, the north-eastern sandy corner of which is named Armyro. Westerly winds blow right into this bay.

Scarpanto is about 26 miles in length in a north and south direction, and from about 2 to 6 miles in breadth. A ridge of high mountains extends the whole length of the island, many of the spurs and ravines of which descend to the coast; the highest peak, Mount Kalolimni, about $11\frac{1}{2}$ miles from the southern end of the island, rises to a height of 4,000 feet. The greater portion of the inhabitants, numbering about 8,000, mostly Greeks, reside in nine villages, well up the mountains, at the southern part of the island.

Communication.—Steamers of the Pantaleon Co. call fortnightly from Smyrna and the adjacent islands.

East coast.—The northern half of the east coast of Scarpanto principally consists of high cliffs, with numerous indentations. Rocks and shoal water front a large portion of it, extending in several places upwards of half a mile from the shore; the southern portion of the coast is bolder, and deep water comes close up to the cliffs. On the south-eastern side, are three open bays named Pegadia, Amorphos and Makri Yalo, in either of which, vessels might find shelter from northerly or westerly winds, in a moderate depth of water, about one-third of a mile from the shore.

Pegadia bay, on the northern side of Vuthia peninsula (the south-eastern extreme of the island), is about 10 miles from Castello point, the south extreme of Scarpanto, and is open to north-east and easterly winds. In the southern part of the bay, are several little islets, and a skala or landing place, with some ruins near it, and $1\frac{1}{2}$ miles inland on the mountain south-west of the bay, is Menites, the largest village on the island.

The bay affords excellent protection during the strong north-westerly winds which occur during the summer months. The soundings shoal regularly from 16 fathoms, towards the beach; H.M.S. *Sylvia* anchored in 10 fathoms, dark muddy sand, with the following bearings:—Vrontos point, N. 41° E., Vuthia point S. 45° E., and the inner rocky islet S. 4° E. There are a few houses and a small Greek church in the southern part of the bay, and a small protected nook or boat-harbour is used by native craft in the sandy bight eastward of the skala.

Supplies of fresh meat and fruit may be obtained.

Amorphos bay, 2 miles further southward, is quite open to south and easterly winds: $1\frac{1}{2}$ miles farther southward and half a mile off shore, is Prassu-nisi, surrounded by rocks and shoal water.

Makri Yalo bay, the southern of the above anchorages, is nearly 3 miles north-eastward of Castello point. In making for this bay from the southward, give Legi point, the southern extreme of the bay, a berth of half a mile, and the coast between it and Castello point,

Lat. $35^\circ 26'$ N.
Long. $27^\circ 11'$ E.

Chart, 2,824.

a berth of three-quarters of a mile, to clear the shoal patches extending from the shore; the bay is quite open to the eastward.

Plan on 2,824.

TRISTOMA HARBOUR.—On the west side of Scarpanto, and half a mile from its northern extremity, is the small harbour of Tristoma, running in east about three-quarters of a mile, and $1\frac{1}{2}$ cables in breadth, with a depth of from $4\frac{1}{2}$ to 9 fathoms water. In the entrance, are two islets, and the channel into the harbour which is only 170 feet wide, is southward of South islet, the two northern channels only admitting boats. Just inside the narrowest part of the entrance, is a bar with 27 feet most water over it. On the slopes of the mountains on either side, the ground is terraced and cultivated. There is a considerable village in Fishery point on the north side of the harbour.

Water.—At the head of the harbour are two springs of water, that on the north is drinkable, but the southern is slightly brackish.

Chart, 2,824.

Vurgoúnda point.—At nearly $2\frac{1}{4}$ miles W.S.W. from Tristoma harbour, is Vurgoúnda point, on the eastern side of which, is a small bay open to the northward. On the western side of the bay, is a village, and a pier runs out some distance from the shore. A little islet lies on the eastern side of the entrance.

West coast.—The coast from Vurgoúnda point to So Kastro, an islet close to the shore and united by rocks to the elbow or western extreme of Scarpanto, a distance of $13\frac{1}{2}$ miles, has deep water all along close to the shore; the northern part consists in places of high cliffs, with depths of more than 100 fathoms nearly alongside them. Southward of the steep cliffs, the coast is sinuous and skirted with rocks.

At about 9 miles south of So Kastro islet, is the clifty cape, Agios Théodoros; the coast between falls back nearly 2 miles, and is irregular with clifty projections, skirted by rocks, and about midway the 100-fathoms line of soundings is a mile from the shore. At 2 miles northward of cape Agios Théodoros, is a peninsula projecting about half a mile from the line of coast, named Paleo Kastro; on the southern side of the peninsula, is a bay where a small vessel might anchor with off-shore winds in from 10 to 6 fathoms. The little islet of Khalkyas lies at the entrance. Northward of the peninsula, is a clifty indentation, and at the north and south extremes of this indentation, are respectively the little bays of Phineki and Arkása with anchorage for small vessels. Both these bays are open to the westward. In Arkása bay there is a village with about 500 inhabitants.

DANGERS.—**Carpatho rock**, with less than 6 feet water on it, and 15 to 20 fathoms close round, lies with the centre of the patch bearing W. by N. $\frac{1}{4}$ N., $1\frac{1}{2}$ miles from the south extremity of Cape Agios Théodoros, and E. by N. $\frac{1}{4}$ N., $1\frac{1}{2}$ miles from Strongilo-nisi off the east extreme of Kaso; it is thus nearly in the middle of the channel between Scarpanto and Kaso islands. To avoid this danger, keep over towards the north-eastern point of Kaso island, which with Strongilo-nisi, the islet close off it on the north, has deep water close-to.

Two-fathoms patch.—Another patch with 2 fathoms water on it, lies N.N.W. distant about 4 cables from the northern extreme of Cape Agios Théodoros. Great caution is therefore required in rounding the cape.

Costello point.—From Cape Agios Théodoros, the coast, which is irregular and rocky, trends south-eastward and terminates at the distance of $3\frac{1}{2}$ miles in the peninsula point of Castello, the southern

extreme of Scarpanto already alluded to. On the north-western side of Castello point is Castello bay, with from 20 to 10 fathoms water, and where shelter might be had from northerly or easterly winds; the bay is open to the south-west, but is slightly protected from the westward by Kaso island about 5 miles distant in that direction. The 100-fathoms line of soundings passes about a mile southward of Castello point, and between this and a little northward of Paleo Kastro, the bank with less than 100 fathoms on it, extends to about $3\frac{1}{2}$ miles westward of Kaso island.

Chart, 2,824.
Var. $4^{\circ} 5' W$

KASO or CAXO.—This island (ancient *Kassos*), $9\frac{1}{2}$ miles in length in an E.N.E. and W.S.W. direction, and $3\frac{1}{2}$ miles in extreme breadth, is separated from Scarpanto by a channel 3 miles wide, but which is interrupted in the middle by Carpatho rock just mentioned. The island, 1,700 feet high, is very mountainous on the south-east and south-western sides, sloping towards the north-west, in which part most of the villages are situated; the population is about 7,500, nearly all Greeks. The shores of the island principally consist of high rocky cliffs with deep water close-to; Agios Georgio point, the north-western extreme is bordered by shallow water, and at nearly half a mile off there are only 5 fathoms. Close off the south-western end are Plati and the two Kurekia islets, the latter being nearer to the coast.

Lat. $35^{\circ} 23' N$.
Long. $26^{\circ} 57' E$.

At a third of a mile north of Kavo Aktis, the north-eastern end, is Strongilo-nisi, less than 2 cables in extent; a little more than 2 miles westward of it, is the rock or islet of Kholofonos, about half a mile from the coast.

Kaso island suffered severely from the effects of the Greek revolution, and became nearly depopulated, but has now recovered, and the inhabitants have some trade.

Communication.—The Pantaleon Co. steamers call here from Smyrna and the neighbouring islands, every fortnight.

The islets of Kaso are a group of islets extending over a distance of $4\frac{3}{4}$ miles, and nearly parallel to the north-western side of Kaso island; the channel between is from $1\frac{1}{2}$ to 3 miles wide. Good anchorage may be found under the islets sheltered from N.W. winds; the best place is off the middle of the long flat islet of Makro nisi, at the north-eastern end of the group, in from 10 to 12 fathoms water, over sand.

From this anchorage, Ophris village on the shore of a small bay eastward of Agios Georgio point, the north-western extreme of Kaso island, is nearly 2 miles distant; it is difficult to land at Ophris with northerly winds.

Kaso rock, with 15 feet on, and deep water round it, lies nearly in the middle of the western part of the channel between Armathia, the largest of the Kaso islets, and Kaso. Kholophonos islet, in line with the north-western part of Agios Georgio point, N. $77^{\circ} E$., leads 2 cables southward of this danger.

Armathia bank, with 4 fathoms water on it, lies 6 cables S. by W. $\frac{1}{2}$ W. from the eastern extreme of the little islet united by rocks to Plato nisia (or the third islet of the group from the westward). There are other shoal patches and detached rocks around and between the islets, but they will be avoided by keeping on the Kaso island side.

Stakida.—This group of four islets, extends over a space of $2\frac{1}{2}$ miles north and south, the largest being about 200 feet high; they are steep-to and lie nearly midway and a little northward of a line between Unia nisia and the northern end of Saria, distant from the latter about $18\frac{1}{2}$ miles.

Lat. $35^{\circ} 53' N$.
Long. $26^{\circ} 51' E$.

Charts, 872,
2,836a.
Var. 4° 5' W.

SCARPANTO and KASO STRAITS are the great channels into the Archipelago from the eastern part of the Mediterranean; the former lying between Rhodes on the east, and Saria and Scarpanto islands on the west, is 24 miles wide and clear of danger, as the least water on the bank extending off Cape Praso nisi, the south-western extreme of Rhodes, is 40 fathoms. The western side of the strait is deep, and the coast of Saria island is high and steep-to.

Kaso strait is about 25 miles wide between the south-western end of Kaso island, and Elasa island lying $2\frac{1}{2}$ miles S.S.E. of Cape Sidero, the north-eastern extreme of Crete (*see* page 236); the strait is very deep and the only dangers are the shoals which extend $1\frac{1}{2}$ miles in an easterly direction from Cape Sidero.

The Current in Scarpanto and Kaso straits, usually runs to the southward; sometimes southerly and south-west winds will cause an easterly current in the southern part of the Archipelago, and greatly increase the current through the straits. The only rule, however, that can be given to assist the navigator, is to allow for a current of from one to $1\frac{1}{2}$ knots an hour in the direction of the wind when it amounts to a fresh or even a moderate breeze.

Chart, 872.
Lat. 35° 49' N.
Long. 26° 29' E.

Unia nisia, are two islets $17\frac{1}{2}$ miles W. $\frac{3}{4}$ S. from Stakida islets; they cover a space of nearly $1\frac{1}{4}$ miles east and west, and can be seen from a distance of 20 miles, appearing on some bearings as two hummocks close together.

Kamila nisi.—At 11 miles W. by N. $\frac{1}{4}$ N. from the Unia nisia, is Kamila nisi, about a mile in length north-east and south-west.

Avgá nisi is a little islet rather more than 6 miles N.N.E. of Unia nisia.

Sophrana nisia are two rugged islets, the larger, Megalo Sophrano, about 600 feet high, being the northern, Makri Sophrano the southern, with a small islet or rock between them, the whole extending over a distance of 3 miles north and south. They lie 19 miles south-west of Wreck rock of Sirina or Agios Ioannis islands. (*See* page 299.)

Lat. 36° 0' N.
Long. 26° 27' E.

Karavi nisia, are two little islets or rocks lying $2\frac{3}{4}$ miles south-south-eastward from Sophrana nisia.

The above islets lie within a radius of about 10 miles, the water around them being deep.

Chart, 1,888.

STAMPALIA.—This island (ancient *Astypalæa*), belonging to Turkey, is about 23 miles east-north-east of Anaphi, and extends $9\frac{1}{2}$ miles in the same direction; the island has a Greek population of about 2,500. It is most irregular in shape forming several bays and inlets, and consists of two large elevated rocky masses, united by an isthmus, which in the narrowest part is only about 120 yards across. The south-western part of the island is $7\frac{1}{4}$ miles in length, and 1,660 feet high; and the north-eastern, 6 miles in length, and 1,299 feet high; each lying in a north-west and south-easterly direction. The deep bights on either side of the isthmus, give at a distance in the above directions, the appearance of two islands.

Livadhia, the chief town, is situated on a promontory forming the northern side of the bay of the same name, on the east coast of the southern portion of Stampalia island, and contains about 1,500 inhabitants, many of whom get their living by fishing, and are tributary to the Pasha of Rhodes. It has a large number of

churches and chapels, sometimes as many as six in a row; they are built to a great extent from the ruins of the ancient temples, and in every part of the town are seen capitals of columns and other remains. Here is a stately mediæval castle, commanding a splendid prospect. The skala or landing-place is in the little bay on the northern side of the promontory on which the town stands.

Communication.—The best way to reach Stampalia is by boat from Kalimno island, or Rhodes.

South-west coast.—Kavo Khilus, the south-eastern extreme of the south-western part of Stampalia, is a small clifly peninsula 249 feet high. The steep irregular coast thence trends westward and northward to the islet of Katergari, a distance of about $7\frac{3}{4}$ miles, and between there are one or two small coves with beaches; the coast is backed at a mile within, by high mountainous land, and the water is all along deep. Katergari islet is about 2 cables in diameter, and the same distance from the shore with 4 fathoms water between; from it, a rocky shoal extends about a cable south-westward. Liani point, the north-western extreme of Stampalia, is nearly $1\frac{4}{10}$ miles northward of Katergari; nearly midway between, is a reef with a rock above water, extending 3 cables from the coast named Kutsimi, and steep-to.

The little round islet called Panormos nisi lies 3 cables north-eastward of Liani point; there are 3 and 4 fathoms water around it, and 27 fathoms midway between it and the point.

Pontikutha islet.—On the bank westward of Stampalia, are the islets of Pontikutha and Ophidusa. Pontikutha is bold, rugged, 8 cables in length, and steep-to all round except at its north-eastern side, where the water shoals a little off. The islet is $1\frac{1}{2}$ miles from Kavo Armenoi, a sharp clifly point projecting from the central part of the coast, the water between being about 40 fathoms deep, over a level bottom. At $1\frac{1}{10}$ miles southward of Pontikutha, are three little islets or rocks called Ktenia, steep-to all round.

Lat. $36^{\circ} 33' N.$
Long. $26^{\circ} 15' E.$

Ophidusa islet lies $3\frac{1}{2}$ miles westward of Pontikutha; it is 2 miles in length north and south, its eastern side being nearly straight. Towards the northern end are some Hellenic ruins; the island is narrow, but the northern part which is triangular in shape, is three-quarters of a mile in length east and west. The coast consists of bold steep cliffs, and the water all round is deep close-to, except at the western extreme, where a reef extends off $1\frac{1}{2}$ cables.

North-west coast.—The great bight on the north-western side of Stampalia, is about $5\frac{1}{2}$ miles wide at the entrance, and from a line between the two extreme points, $3\frac{1}{2}$ to 4 miles deep; the coast on either side is indented with bays and inlets. It is divided into two parts by a chain of islets named Phokeo nisía, extending upwards of 2 miles north-westward from the isthmus; the shores of the isthmus and islets are bordered by shallow rocky ground, which runs off nearly half a mile northward of the islets. There is no passage between the islets, or between them and the isthmus, except for boats or vessels of light draught.

Port Panormos.—The principal inlet on the western side of the deep bight, is Port Panormos, which is 7 cables long, with depths of from 40 fathoms at the entrance, to 9 fathoms at its head, the port is two-thirds of a mile eastward from Liani point, and open to the northward.

Chart, 1,888.
Var. 4° 15' W.

St. Andrea bay, the head of the great bight westward of Phokeo nisia, has anchoring depths of from 15 to 6 fathoms, but it is open to the north-west.

Port Vathy.—On the eastern side of the bight, is Port Vathy, a basin in the interior, nearly a mile in length, with from one to 5 fathoms water, but the narrow passage into it, is barred by a shoal with only 9 feet water on it. In June 1877, it was found that a wooden pole would penetrate to a depth of 30 feet, in any part of the entrance.

Vaie inlet, at the south-eastern corner of the bight, is a mile long, with from 15 to 8 fathoms near its head, but like St. Andrea bay, it is open to the north-west.

North-east coast.—The north-eastern coast of Stampalia is nearly straight, composed of steep rocky cliffs broken by several inlets, and backed by high land; it is all along steep-to.

South-east coast.—Between the south-eastern extreme of the eastern part of the island, and the narrow part of the isthmus, the coast forms several bays or inlets, and on the bank fronting it, are nine or ten inlets, besides rocks and shoals.

Lat. 36° 2' N.
Long. 26° 29' E.

Kunupia.—The outer and largest of these islets is Kunupia, $1\frac{1}{10}$ miles in length north and south, and nearly divided into two parts, the southern part being connected to the northern by a low sandy neck.

Kutzomiti.—At $6\frac{1}{2}$ cables north-westward of Kunupia, is Kutzomiti islet, smaller, though nearly of the same length as the former, but lying in a north-east and south-westerly direction; between the two, are four smaller islets or rocks surrounded by shoal water.

Baraka Xera.—At $1\frac{2}{10}$ miles northward of Kutzomiti, and fronting the deep bay westward of the eastern extreme of Stampalia, is the Baraka Xera, with only $2\frac{1}{2}$ fathoms water on it. The shoal lies $3\frac{1}{2}$ cables south-eastward from Baraka, a rounded headland 164 feet high, the eastern entrance point to Port Agrilithi; the southern side of the shoal is steep-to, but at the northern side there are from $5\frac{1}{2}$ to 9 fathoms.

Plan, 387.

Agio Kyriaki island lies $1\frac{1}{2}$ miles westward of Kutzomiti; it is about $3\frac{1}{2}$ cables in diameter, 81 feet high, and bordered by a narrow bank with sunken rocks here and there; on its southern side is a rocky cove, and close to its south-eastern end is an islet with shoal water extending nearly a cable eastward.

Oxo Xera.—South-eastward of Agio Kyriaki, are three banks known collectively as Kyriaki shoals, the southern with 21 fathoms water on it, the middle with 6 and 7 fathoms, and the northern named Oxo Xera, with 2 fathoms. This latter shoal, nearly 2 cables in length within the 5-fathoms line, has general depths of 3 and 4 fathoms; its shoalest head with 2 fathoms lies $5\frac{1}{2}$ cables S. by E. $\frac{1}{4}$ E. from the south extreme of the islet, at the south-eastern end of Agio Kyriaki. The western extreme of Glinio nisi, N. 21° W., open west of Agio Kyriaki, leads westward of the shoal.

Konomato Xera.—This shoal which is $1\frac{1}{2}$ cables in extent, lies north-eastward of Agio Kyriaki, and has only $1\frac{1}{2}$ fathoms water on its shoalest part, and elsewhere from 2 to $4\frac{1}{2}$ fathoms. Between the shoal and the shallow water bordering Agio Kyriaki, the passage is about $2\frac{3}{4}$ cables wide, and the north-east extreme of Glinio nisi, in line with the south-western point of Kondro nisi, bearing N. 32° W., will lead through in mid-channel.

At about 60 yards north-eastward of the extremity of Skinonda point, in the central part of Port Maltezana, is a white obelisk about 14 feet high, which kept open eastward of Kondro nisi, bearing N. 40° N., leads eastward of Konomato Xera. Plan, 387.
Var. 4° 15' W.

Bogazeu Xera.—At nearly 2 cables north-westward of Agio Kyriaki, is the Bogazeu Xera, a shoal with 3 fathoms water on it; from half a cable to 1½ cables north-eastward of the shoal, are other patches with 4 to 5½ fathoms. These shoal patches will be avoided, by keeping westward of a line joining the western extremes of Glinonisi and Agio Kyriaki, until the western point of entrance to Port Agrilithi is in line with, or nearly touching the southern extreme of Kondro nisi, bearing N. 53° E.; this latter mark will lead northward of the shoals, or between them and Glinonisi.

PORT MALTEZANA is formed on the southern side of the isthmus, which unites the two parts of Stampalia. The port is nearly 1½ miles in length, and nearly half a mile in greatest breadth, with from 4½ to 16 fathoms, sand and mud. It is well sheltered and covered on the south by the islands of Glinonisi and Kondro nisi, and adjacent rocks; it is bordered all round by a shallow bank, and S.E. one cable from Skinonda, the central point, is a detached shoal with 4 feet water on it.*

There are three entrances to the port; the western, north-west of Glinonisi between two little islets, 32 feet and 18 feet high, with a depth of 3½ fathoms, is fit for small vessels only. Between Glinonisi and Kondro nisi, is a deep entrance which may be taken by a vessel under steam or with a fair wind, by keeping in mid-channel and avoiding the shoals off the salient points; a shoal with three fathoms on it, lies N.W. ½ W. one cable from the north-west extremity of Kondro nisi. The eastern entrance or passage northward of Kondro nisi is however the best, especially from the eastward taking care to avoid the Baraka Xera, and the shoal extending half a cable from Vriseu Punda, the point opposite or northward of Kondro nisi.

There is also temporary anchorage during fine weather in summer, in the bay formed between Makria Punda and Glinonisi; the bottom is sand and mud, but the water is rather deep.

Water.—At the head of the port at the western end, there are some wells of good water.

SIRINA or AGIOS IOANNIS ISLETS.—At 8½ miles south-eastward of Kunupia islet, is a group of three little islets named the Adelphæ, extending 2 miles east and west, with deep water round them. Chart, 872.

Sirina island lies 3½ miles south-eastward of Adelphæ islet; it is about 2½ miles in length, rugged, and 1,087 feet high, with deep water round it. Lat. 36° 21' N.
Long. 26° 41' E.

At 1½ miles south-eastward of Sirina, and on a separate bank, is Goat islet, 35 feet high, with a sunken rock on its eastern side, and a rock or islet, 10 feet high, called Kid rock, south-west of it. On the same bank farther south, are the Tria nisia, with 9 fathoms water between. The southern islet of Tria nisia is 232 feet high, and 2 miles westward of it is Wreck rock, 10 feet high, on another bank, and appearing like a vessel's hull.

Charts, Nos. 2,836a, 872.

* In September, 1879, a British squadron, consisting of the *Alexandra* flagship, and three other heavy vessels, moored in port Maltezana; and the *Temeraire* (8,540 tons) moored in the channel between Glinonisi and Kondro nisi, with the north-west extreme of Kondro nisi N.E. ½ N., south-west extreme of the same island S.S.E. ½ E., and the north-east extreme of Glinonisi N.W. ½ N.

Plan on 2,836a.
Var. 4° W.

KANDELIUSA.—This island (*Madonna*), a mile in length, half a mile in breadth, about 180 feet high, and steep to all round, is about 16 miles north-eastward from Sirina or Agios Ioannis islands, the passage between being deep and clear.

LIGHT.—From a white tower, 33 feet high, on west side of light-house keeper's dwelling, 109 yards within the south-western extreme of Kandeliusa, and at an elevation of 180 feet above the sea, a *fixed* and *flashing white* light is exhibited, showing *flashes every two minutes*, and visible in clear weather from a distance of 18 miles. The light is obscured by the island when bearing from N. 74° W., through west, to S. 39° W.

Chart, 1,898.

PISKOPI or TILO.—This island (ancient *Telos*) about 8½ miles in length, north-west and south-east, and from 1 to 4 miles in breadth, is irregular in shape and indented by several bays. It is mountainous throughout its length, and at the north-western end, Agios Elias, the highest peak, attains an elevation of 2,010 feet; the hills round the island rise into detached peaks of considerable height, and add much to the beauty of the scenery. The north-western coast consists of high cliffs. There are several remains of antiquity in fragments of columns, altars, and inscriptions, and on the shore of Livadia bay is an extensive ruined fort of the Cyclopean order, now the resort of partridges. Some Venetian towers still remain.

There are two villages on Piskopi, and the plain between them is well cultivated and produces almonds (the staple), olives, vines, figs, &c. The inhabitants of the island number about 3,000 Greeks, who pay a small tribute to the Pasha of Rhodes, and who maintain themselves by agriculture.

Supplies and water.—Pigs are reared, and small supplies of stock may be obtained; no fuel is to be procured, and most of the meat and charcoal are derived from Asia Minor; water is scarce.

Lat. 36° 29' N.
Long. 27° 20' E.

Gaidaro islet, off the north-western end of Piskopi, is three-quarters of a mile in length, bold, 447 feet high, and separated from Spano point, the western horn of Plagio bay, by a deep and clear channel half a mile wide. Two rocks, above water, lie close to the west coast of Piskopi about three-quarters of a mile southward of Spano point.

Plagio bay, at the northern end of the island, is open to the northward, and at its head is the skala, half an hour's walk from Tilos, the chief village, which, entirely hidden from the anchorage in Plagio bay, contains about 125 houses, and stands on the side of a steep hill facing south. Vessels requiring cargoes lie off the skala in 8 or 10 fathoms, sandy bottom, but it is not advisable to anchor here if it can be avoided, as the holding ground is not good, and a swell, attended by a current, frequently sets in before a northerly wind, which renders it difficult for a sailing vessel to get out. The entrance points should not be approached too near, and the eastern shore of the bay is skirted by rocks.

Livadia bay, on the north-eastern coast of Piskopi is considered the safest anchorage, though exposed to north-easterly winds; it is bordered by a bank, and in the middle of the bay the water is rather deep, but there are anchoring depths near its head, and a berth will be found in 11 fathoms, good holding ground. During summer, vessels lie here with a hawser to the eastern shore. The little islets of Prasuda and Gaidaro-nisi lie close to the shore, north-west of the bay; they are surrounded by shoal water, and there is no passage inside them.

Piskopi head, the eastern extreme of the island, rises from deep water, and nearly half a mile within it the land is 1,620 feet high. The 100-fathoms line of soundings passes round the head at a distance of less than 2 cables. Chart, 1,893.
Var. 3° 50' W.

A sunken rock lies close off Kinduno point, the southern extreme of Piskopi, and shoal water extends nearly 2 cables southward from Kavo Pelagusa, the point next west of it.

Megalo bay, on the south-western side of the island, is about $1\frac{1}{2}$ miles deep, but entirely open to the southward. At its head there are anchoring depths in 16 to 12 fathoms, sand, but inside the latter depth the bottom is foul; the shore at the head of the bay is bordered by a bank. A little islet, named Agios Andreas, lies off the western point of entrance, and a reef of rocks extends nearly 2 cables southward from Kavo Maru, the eastern point.

Light.—It is proposed shortly to exhibit a white fixed light, visible 10 miles from Agios Andreas islet.

Anti Tilo (or *Askino nisi*) is $1\frac{1}{2}$ miles in length, north-east and south-west, narrow, high, and steep to all round. It is separated from the south-eastern end of Piskopi by a channel $1\frac{3}{8}$ miles wide, and 150 fathoms deep. The passage between Anti Tilo and Khalkia on the south (*see* page 291) is nearly 8 miles wide, clear and deep.

NISEROS (ancient *Nisyros*), in the form of a pentagon, 4 miles across, is composed of rocky volcanic mountains, and a long irregular crater occupies a large portion of the centre of the island. The edges of the crater rise generally from 1,350 feet to 1,874 feet above the sea, but a small crater to the westward, the greatest elevation of the island, is 2,270 feet high. Sulphur is found in the large crater, the bottom of which forms a small plane only 455 feet above the sea. The sides of the island are precipitous, with terraces to the top in order to keep the earth from washing down in the rainy season. The groves of almond trees, vineyards, &c., present a picturesque appearance from the sea. Lat. 36° 35' N.
Long. 27° 11' E.

Mandraki, the chief village, near the site of the ancient town of Niseros, at the north-western point of the island, is dirty, but the ruins of the ancient fortifications on a point south-westward of it, give it an appearance of consequence which a nearer inspection dissipates. There are two other villages, Imbori and Nikia; the latter erected on the extreme edge of the crater, is about an hour's walk from some hot springs at the south-eastern extreme of the island.

Niseros is tributary to Rhodes, and the population amounting to about 2,500, are civil and industrious. There are neither mules nor horses on the island, but only a breed of small asses, on which and men's shoulders everything has to be carried. The produce consists of almonds, olives, figs, wine, and valonia.

There is no port or anchorage for large vessels, but the skala is at a slightly projecting point on the northern side about $1\frac{3}{4}$ miles eastward from Mandraki, and vessels occasionally drop an anchor off it, in fine weather during summer, but if they require to remain in the vicinity they anchor in 3 or 4 fathoms, sand, on the south-eastern side of Yali. The shores of Niseros are bordered here and there by scattered rocks, but they do not extend far off.

As may be expected from the nature of the island, there are many hot springs; the most important being at Cape Lutros, its southern

Chart, 1,898.
Var. 3° 55' W.

extremity, where the villagers assemble to wash their linen and bathe. Under Petrodi point, the south-western end of the island, are some hot air caves.

Supplies.—Provisions are scarce, and water is all preserved in tanks.

Communication.—There is fortnightly steamboat connection with Smyrna by the Pantaleon Company.

Lat. 36° 34' N.
Long. 27° 6' E.

Rakhia, or Pasha islet, about $1\frac{1}{2}$ miles westward of Petrodi point, is more than a mile in length, and 350 feet high. At a little less than half a mile north-eastward of its eastern point, is a small rocky shoal with only 3 feet water on it, and difficult to see; and at about the same distance northward of Petrodi point, Niseros, is a similar shoal. There is deep water inside both shoals, and the passage between them is clear, and $1\frac{1}{2}$ miles wide. These shoals are the only dangers in working between Rakhia and Niseros; and in standing towards the former, do not open Strongyli islet more than half its breadth of the north-western part of Niseros, N.E. by N., until well northward or southward of Rakhia islet. With a fair wind keep in mid-channel.

Rigusa, or Perigusa, north-west of and similar to Rakhia, but only 235 feet high, is bordered by shallow water and rocks. In a bend of the shore on the eastern side of Rigusa, a small vessel might drop an anchor, but close in, during westerly winds. The passage between Rakhia and Rigusa is a mile wide, and with the exception of the shoal ground bordering the latter islet, is clear and deep.

Yali (or *Ialos*), north-west of Niseros, is nearly 3 miles in length north-east and south-west, and consists of two portions united by a low isthmus about $1\frac{1}{2}$ cables across, the northern portion being 580 feet high; the coast is irregular and bordered by shallow water and rocks, which on the south-eastern side extend off half a mile. A little islet southward of the north-eastern part, known as Agios Antonios, is joined to Yali by shoal ground; a quarter of a mile southward of the islet, is a rock with less than 6 feet water on it, and between is a depth of 32 fathoms.

Rock.—At about 4 cables S.W. of the southern point of Yali, is a small rocky shoal with 3 feet water on it, and 10 fathoms between it and the point. When in the vicinity of the point, the north-eastern extreme of Yali N.E. $\frac{1}{2}$ N. open eastward of Agios Antonios will lead eastward of the shoal.

Lat. 36° 41' N.
Long. 27° 13' E.

Strongyli, a small circular islet about 3 cables in diameter, and 410 feet high, lies $1\frac{1}{10}$ miles eastward of Yali, and between, the water is from 25 to over 100 fathoms deep. The passage between the northern end of Yali and Kos island, is $4\frac{1}{2}$ miles wide, deep and clear, though the coast about Andemaki point, Kos island, is foul and should be given a reasonable berth.

The Current runs strongly round Niseros and the surrounding islands, at uncertain times, and in various directions.

Chart, 1,604.

SYMI.—This island (ancient *Symê*) lies at the entrance of the gulfs of Doris and Symi. It extends about $6\frac{3}{4}$ miles north and south, and $5\frac{1}{2}$ miles east and west, but it is most irregularly shaped, its coast being indented with numerous bays and inlets. Symi, the only town in the island, stands on an acclivity above the skala in the harbour, which is a nook or basin about a quarter of a mile north and south, and $1\frac{1}{2}$ to

2 cables wide, with a narrow entrance, on the southern side of the bay of the same name, at the north-eastern end of the island. Chart, 1,604.
Var. 3° 45' W.

Industries.—The inhabitants, amounting to about 8,000, nearly all live in the town, and are chiefly occupied with the sponge fishery, which employs about 150 boats and a dozen small vessels. The island is the head depôt for European manufactured goods, which are thence exported throughout the Sporades; it is also tributary to Rhodes.

Symi harbour is enclosed by steep mountainous land about 1,800 feet high, and the water is deep, there being 24 fathoms in the middle. It is much frequented by vessels of 200 to 300 tons; an anchor is dropped near the centre, and the vessels then haul alongside the quay which runs round the harbour where there are bollards for making fast. The larger vessels lie on the western, and the sponge boats and small craft on the eastern side. The harbour is so small, that during the winter months there is scarcely room for the number of vessels that lay up here. A mooring buoy belonging to an English company, lies in 24 fathoms water. Vessels should enter with caution.

Communication.—Steamers of the Pantaleon Company call fortnightly, and those from Smyrna to the Syrian coast call weekly.

Symi bay is $2\frac{1}{2}$ miles deep, and except at Nemborio bay in the south-western corner, averages about a mile in width; the water is deep, but off the sandy beach at the head of Nemborio bay there are from 14 to 20 fathoms. Nemborio is separated from Symi harbour, eastward of it, by a rocky projection about half a mile across. Lat. 36° 38' N.
Long. 27° 54' E.

Nimos island, close north of Symi, is nearly 2 miles in length, east and west, and its southern side forms, with the north-western end of Symi to which it is connected by a reef, the north-western side of Symi bay. Skilo rock, above water, and steep to on the outside, lies close to the east end of Nimos; on the western side of Nimos is the islet of Kondros, southward of which, off the coast of Symi, are the islets of Plati and Oxa.

Pethi harbour, on the eastern side of the island and three-quarters of a mile southward of Symi bay, is also a snug little port with a narrow deep entrance open to the north-east. Within the entrance there are from 18 to 5 fathoms water, good holding ground, with sandy beaches. Here are some remains of a castle and of Cyclopean walls. When off this harbour, the town of Symi, some windmills, and a circular building, will be seen on the hill westward of its head. It is said that this harbour is better and more convenient than Symi or Nemborio bay.

Supplies.—Supplies of beef and bread can be obtained from the town of Symi, which is less than a mile from the anchorage.

From Pethi harbour to the southern end of the island, a distance of nearly six miles, there are several bays formed between the spurs or ridges of the high land; these bays are all open to the eastward, having deep water, and of no importance.

Paniero harbour, on the western side of the south end of Symi, is an oval basin half a mile in length, with 5 fathoms water just within the entrance and shoaling to 3 feet. It is sheltered from all winds, and a convenient port for small vessels, though it is said the bottom is indifferent holding ground. The entrance is about a cable wide, and on the south-eastern side of the bay is the monastery of Panormiotes, inhabited by a few Greek monks. There is nothing to be obtained, as the inmates of the monastery are the only persons here, and all necessaries have to be brought from the town of Symi in boats, as the road is over steep, rugged land.

Chart, 1,604.
Var. 3° 45' W.

In proceeding for Paniero harbour, give Patos point, a tongue-like projection southward of it, a reasonable berth, as it is surrounded by rocks, then keep the southern shore aboard until the entrance is open.

Seskli island, off the southern end of Symi, is about a mile in length east and west, and three-quarters of a mile in breadth; its eastern point is bordered by rocks above water. Trambeto islet lies off the south-eastern, and another islet off its western side. The passage between the island and Symi is about 4 cables wide, clear, deep, and called Seskli strait.

Yavales islets.—The western coast of Symi is rugged and irregular, with several bays and projecting points. At the central part of the coast is a ragged, irregular projection, and from it a chain of four rocky islets extend $1\frac{3}{4}$ miles south-westward, called Yavales islets. The outer islet is known as Marmara islet, and is separated from the rest by a passage one-third of a mile wide having a depth of 16 fathoms in mid-channel. The three northern islets are closer together and skirted by rocks; rocks also extend off from the south side of Marmara, and the 100-fathoms line of soundings is less than a quarter of a mile outside it. There is nothing to be gained by rounding Marmara islet closely, and it should therefore be given a reasonable berth.

Lat. 36° 33' N.
Long. 28° 1' E.

CAPE ALUPO (ancient *Kinossima prom.*) is the southern extreme of a long narrow peninsula projecting south-westward from the mainland and which separates Rhodes channel from the gulfs of Symi and Doris. The shores of this peninsula (which is covered with ancient and middle age ruins) from Cape Alupo to Cape Marmarice, its eastern extreme, a distance of nearly 20 miles, are steep and rugged, with a range of limestone mountains at the back averaging 1,500 feet in height.

Rock.—A sunken rock lies at the foot of Cape Alupo, and it should be given a reasonable berth in rounding.

Port Aplotheke is situated nearly 2 miles to the eastward of Cape Alupo, the coast between forming several bold projecting points. The port extends three-quarters of a mile in a N.W. by N. direction, and although deep at the entrance, has good anchorage in any convenient depth towards the head. A rock above water lies close to the shore just within the western point of entrance, and sunken rocks lie at the foot of the eastern point of entrance; the interior of the harbour is clear. The ruins of a large fortress mark the summit of a rocky barren ridge rising over the head of the port.

Supplies are limited, and not to be depended on, and the only water to be obtained is brackish.

Ipsera island.—From the south-east entrance point of port Aplotheke, the coast trends eastward half a mile to a point, close off which are several rocks and an islet; a quarter of a mile south of the point is Ipsera island, separated from the islet just mentioned, by a passage about a cable wide and having a depth of 10 fathoms in mid-channel.

Lat. 36° 35' N.
Long. 28° 6' E.

Port Sertchek.—From Ipsera island the coast trends N.E. $1\frac{1}{4}$ miles to the entrance of the small port of Sertchek (ancient *Sersa*), which is only available for small vessels.

For a continuation of the description of the south-eastern coast of this peninsula, see *Mediterranean Pilot*, Vol. II.

GULF OF SYMI.—Cape Volpé (*Kavo Noria*), $3\frac{1}{10}$ miles northward of Cape Alupo, is the north-western extreme of the peninsula of which the latter is the southern extreme; the coast between the

two capes is rugged with a central projection on the northern side of which is a bay with a small clifly creek and some ruins, named Karamaki. Cape Volpé is bordered by shoal water which is steep-to and it should be given a reasonable berth in rounding.

Cape Volpé is $3\frac{1}{2}$ miles from Symi island, and forms the southern point of entrance to the Gulf of Symi, the northern point of entrance being cape Apostoli $4\frac{1}{2}$ miles northward. From the line joining these two points, the gulf is $6\frac{1}{2}$ miles deep, with several islands and bays near its head. Along the southern shore, are the little islets of Miniko, Petro, Aulaki, Plati, and Makri; the water is deep on either side of the two former, but there is no ship passage between the three latter. A vessel may pass into Saranta bay, north of Aulaki, or south of Makri islet. Mount Kara Esek, south-eastward of the islets, is 1,780 feet high; northward of the mount are large ancient ruins.

A rock above water, and a sunken one outside it, lie off the entrance of a little cove south-westward of Miniko islet.

Saranta bay in the eastern part of the gulf, is formed by a southerly projection of the land, off which is the island of Karmari lying in the same direction, and united to it by shoal ground. At the head of the bay, is the village of Saud, or Saranta, and on a hill south-eastward of it are the remains of an ancient fortress. On the eastern side of Saranta bay, the shore in one or two places is bordered by shoal water, and a sunken rock lies a little off the shore at the head of the bay, with others near the eastern side of Karmari island, about half a mile from its extreme south point. The islets of Aulaki, Plati, and Makri, front the bay south-westward.

On the north-western side of Karmari island, is the island of Lebunia, about half a mile in length, connected to Karmari by a shoal, and at its western end are two little islets and a sunken rock, with deep water near them. Lebunia covers a bay on on the north, but the water in it is too deep for ordinary anchorage.

Vunos island, $1\frac{1}{4}$ miles in length north and south, covers the approach to Badalena bay. Its northern end is about a cable from the northern shore of the Gulf of Symi, and this narrow passage with rocks on either side, carries from 2 to 3 fathoms water.

Lat. $36^{\circ} 39'$ N.
Long. $28^{\circ} 5'$ E.

Badalena bay runs in more than a mile to the northward, with an average breadth of about half a mile, and is land-locked. The water is rather deep at the entrance, but inside a small islet with some ruins on it, the depths are from 10 to 18 fathoms; at the north-western part of the bay, the water shoals off from a small projection nearly two cables. There are some houses and a water-mill on the eastern shore, and over the head of the bay north-eastward, are the remains of a mediæval fortress.

The ship passage to Badalena bay is round the southern end of Vunos island, and northward between Agia Varvarah islet with ruins on it on the west, and the eastern point of entrance; thence eastward of the small islet with ruins on it. The water in mid-channel is deep, and the only danger to be avoided is the shoal bordering the north-western part of the bay.

Cape Apostoli.—At about three-quarters of a mile westward of Vunos island, is the little islet of Khaskos, separated from a sandy beach on the north by a narrow passage with $1\frac{1}{2}$ fathoms water. At $2\frac{1}{2}$ miles westward of the islet is Cape Apostoli, the termination of

Chart, 1,804.
Var. $3^{\circ} 45'$ W.

an irregular promontory, which, like the peninsula on the southern side of the Gulf of Symi, has numerous mediæval ruins on it. At about 4 cables eastward of the cape, is a little cove, with 10 fathoms at its head; rocks extend off both points of entrance, and are steep-to. Cape Apostoli is nearly 5 miles eastward of Nimos island off the northern end of Symi island (*see* page 303), and both are on the southern side of the Gulf of Doris.

Age Latha.—This dangerous patch of rocks, barely above water and steep-to, lies about $3\frac{1}{2}$ cables S.W. by W. from the south-western extreme of Cape Apostoli, with from 30 to 45 fathoms water between. At night, the cape should be given a wide berth.

Mesia bank, with 9 fathoms on it, lies $1\frac{1}{2}$ miles W.N.W. of the cape.

GULF of DORIS.—Between Cape Apostoli and Orta point, bearing from it N.W. by N. $\frac{3}{4}$ N., the distance is $4\frac{1}{2}$ miles, and from this line the Gulf of Doris and Arineh bay (Gulf of Renas) run in $10\frac{3}{4}$ miles. From the cape, the southern shore of the Gulf is irregular, and forms several little bays fronted by five islands or islets known as Nisia Kalopothia. The first three of the islets, Oneah, Ikinji, and Mikale are small, and two rocks above water extend from the northern end of Oneah; the point of the coast southward of this latter islet is foul. The water round the islets is deep, and there are narrow passages through them, and between them and the shore.

Lat. $36^{\circ} 43'$ N.
Long. $28^{\circ} 4'$ E.
(Kaloyeri).

Kaloyeri and Karamea, the two eastern and largest islands, are each about a mile in length, and partially cultivated; the water between them is deep, but the southern end of the former is bordered by a shoal, and likewise the point of the mainland point south of it, but the narrow pass between has 15 fathoms water in mid-channel. The southern side of Karamea island is skirted by rocks, but the passage between it and the coast, with the exception of a large rock above water within the eastern entrance, is clear and deep. On the main, opposite the opening between Kaloyeri and Karamea islands, and on the east side of the eastern bay, are conspicuous bold precipitous cliffs; the scenery here is grand and imposing.

The northern shore of the gulf is not so deeply indented, but barren, of a reddish colour, and forms a strong contrast with the opposite coast.

Losta bay, at the termination of the cliffs on the south shore previously mentioned, and eastward of Karamea island, extends about $2\frac{1}{2}$ miles south-eastward, and opens out upwards of a mile south-westward, where it averages three-quarters of a mile in breadth, and takes the name of Port Losta. The bay affords a most attractive view; on the northern side are ancient ruins, and the remains of a castle on the summit of a hill. At the head of Port Losta are some houses, a water-mill, and the remains of another mediæval fortress.

Dangers.—In entering Port Losta, a rock with 3 feet water over it lies a quarter of a mile inside the western entrance point, while at the same distance S.W. by W. from the eastern entrance point, is a large rock or islet with shoal water extending from it southward, with 10 fathoms inside it; elsewhere the water is deep.

Arineh bay, or Gulf of Renas, in continuation of the Gulf of Doris, is $3\frac{3}{4}$ miles deep, and for $1\frac{1}{2}$ miles within, it is only a mile wide, when it opens out, with bays or indentations on either side, a semi-

circular sandy shore at its head, and anchoring depths in every part of it. The little islet of Koraka, skirted on the north by rocks, lies close to the shore at the south-east point of entrance; the larger islet of Thiaspori, also bordered by rocks, lies at the north-west point of entrance, covering a little bight formed by a projecting tongue of land north-westward, the southern termination of which is called Pinnacle point.

Sunk rock.—At 3 cables S.W. by S. nearly from Pinnacle point, is Sunk rock with one fathom on it, and deep water round it. The north-eastern point of the bay next north-east of Thiaspori islet, in line with the south-east extreme of the islet bearing N. 47° E., leads south-eastward of Sunk rock.

The north-eastern part of Arineh bay, between Port Kiervasili and two sandy coves north-westward, is mainly a circular beach, with from 8 to 16 fathoms water, muddy bottom, off it. In the middle of the beach the Erchuse Chai runs into the sea; there are several ancient ruins in the vicinity, and on the eastern side, a mediæval fortress.

Arineh town (*Assareneh*) is about $1\frac{1}{4}$ miles in from the eastern shore.

Port Kiervasili is a narrow inlet running $1\frac{1}{2}$ miles south-south-eastward from Arineh bay, the average breadth being about a third of a mile; but about two-thirds in, it is contracted by a islet which is united to the western shore by shoal water; the depths decrease from 17 fathoms at the entrance, to 5 fathoms at the head. The eastern shore is mainly a beach bordered by shallow water, with a lagoon at the inner part; within it, are scattered remains of the middle ages, and north-westward of the elevated land of Arin Dágh, are the ruins of an ancient temple and a theatre. The village of Kiervasili is about three-quarters of a mile eastward from the inner part of the port, and from it, a road leads to Marmarice harbour.

Lat. 36° 45' N.
Long. 28° 10' E.

Pedalo bay, westward of Port Kiervasili, and separated from it by a tongue of land, the extremity of which is skirted by rocks, is nearly half a mile deep, having a beach at its head, with from 10 to 14 fathoms water; its western side of entrance is also bordered by rocks.

Penzik.—This narrow islet, westward of Arineh bay, leads up to the Dorian isthmus. Its entrance is fronted by the little islet of Kofinitha, from which, a reef extends northwards $1\frac{1}{2}$ cables, with 15 fathoms water in the narrow passage between it and the north-western shore; on the east side of the islet, with the exception of Sunk rock previously mentioned, the passage is clear. The inlet extends north-north-eastward $1\frac{1}{4}$ miles, and carries from 15 fathoms water at the entrance, to 2 fathoms at its head, but on the western shore about half way in, is a sunken rock.

The Dorian isthmus is about half a mile across, as in the days of Herodotus, and small boats are occasionally hauled over it.*

DORIAN PROMONTORY (or ancient *Triopium*), separating the Gulfs of Doris and Kos, is a long tract of land, irregular in shape, of considerable elevation in places, and at the Dorian isthmus and Datcha bay, nearly divided into islands by the waters of the two

Charts, Nos. 2,836a, 872.

* It was attempted in ancient times to cut through the Dorian isthmus, but the workmen were so obstructed by the peculiar nature of the ground that they imagined it to be the interference of some supernatural power, and the inhabitants of the promontory sent for advice to the Pythian oracle at Delphos, who declared that if Heaven had intended it for an island it would have been one. The attempt was therefore laid aside, but the isthmus was fortified by a wall, the tower and remains of which a few years ago were to be seen. The ground appears to be of volcanic origin, and composed of a calcinal crumbling rock somewhat resembling flint or rather vitrified stone.

Chart, 1,604.
Var. 3° 40' W.

gulfs. The promontory extends westward about 35 miles from the mainland, varying in breadth from about half a mile, to $6\frac{1}{2}$ miles, with several coves or bays along its southern side. A high mountainous ridge runs through its centre as far as Datcha bay, when it gradually falls, but rising again to the westward, forms a great mass which reaches an elevation of 3,850 feet above the sea.

Shoals.—A shoal with one fathom water on it, lies close to the eastern side of entrance to Lintos bay; at about 6 cables south-westward of the eastern point of Lintos bay, is another shoal with 5 fathoms on it.

Lat. 36° 45' N.
Long. 27° 57' E.

Kochini bay (*Kato Armakitha*) is about $6\frac{1}{2}$ miles westward of Penzik inlet; the coast between is irregular, and forms several little bays and coves.

Orta point, on the eastern side of entrance to Kochini bay, has a rocky shoal at its foot, and between the point and Kara point on the west, the bay falls back nearly a mile northward, but on its eastern side, is a group of small islets or rocks, steep-to, and which contracts the passage to about half a mile. There is anchorage in the western part of the bay in 15 fathoms, mud bottom, or farther in if necessary.

Kara point is the extremity of a small promontory connected to the main by a sandy isthmus; the promontory divides Kochini bay, on the east from Ano Armakitha bay on the west. A small islet surrounded by shoal water, lies off the south-western extreme of the promontory, and from the eastern side of Ano Armakitha bay shoals extend one-third its breadth across.

Water.—Ano Armakitha bay is nearly a mile deep, with a circular sandy shore at its head, and here a small stream of good water runs into the sea.

Gull rock.—This rock, 8 feet above water, is the outer of a cluster of little islets or rocks extending from rocky points over a distance of about $1\frac{1}{4}$ miles, in the vicinity of which, are mediæval ruins. Gull rock is steep-to, lies about 4 miles westward of Ano Armakitha bay, and on the eastern side of the entrance to Datcha bay.

Datcha bay.—From the western end of the rocky points just mentioned rocks above and below water with ancient ruins on them and deep water close to, extend in a south-westerly direction nearly three-quarters of a mile. Close to the westward of these rocks, is the islet of Aiak adasi, 4 cables in length, and skirted by rocks. From the rocky point, a sandy shore curves round to the west and south-west, forming Datcha bay, which is about $3\frac{1}{2}$ miles wide and a mile deep, with depths of from 6 to 25 fathoms, muddy bottom, affording well sheltered anchorage from all winds from south-west round northward to east.

The land in the vicinity of the bay is partially cultivated; on the western side a small stream runs into the sea, and south of the stream are large ancient ruins on the point separating Datcha and Chatalia bays. The town of Datcha stands on rising ground $1\frac{1}{2}$ miles inland to the westward, and the Custom-house is in a little cove in the southern part of Chatalia bay, and off which there is anchorage for small vessels.

The Dorian promontory at Datcha bay is contracted to a little over one mile across, and the elevated ridge which rises over the coast eastward, culminates north-eastward of the bay in Mount Emeji, 2,440 feet high, and three-quarters of a mile from the southern shore of the Gulf of Kos.

Ata islet.—A small isolated islet or rock, named Ata or Plati, with sunken rocks at its base and deep water close to, lies nearly three-quarters of a mile south-eastward of the southern extreme of Datcha bay, and there are from 25 to 5 fathoms between it and the shore.

Chart, 1,604.
Lat. 36° 43' N.
Long. 27° 45' E.
Var. 3° 40' W.

Injah point (Cape Kalosuru), a narrow tongue of land half a mile in length projecting south-eastward, is the south-eastern termination of the high mountainous mass which forms the western part of the Dorian promontory. The point is steep-to, the 100-fathoms line of soundings being only 2 cables from it.

Baba island.—The island of Baba or Baba Nikola, lies 8 miles westward of Injah point; the coast between is irregular, and some of the projecting points are bordered by rocks. The high land 3 miles in the interior, reaches the height of 3,850 feet above the sea. Baba island is rather more than half a mile in length north and south, and with the exception of a sunken rock close to its southern end, is clear all round.

Epano Georgios.—Northward of Baba island is Epano Georgios, a semicircular bay with a beach on its western side, off which, and north-westward of the island, vessels frequently anchor during northerly winds in from 10 to 17 fathoms water, sand or mud, or mud bottom.

CAPE KRIO.—At 1½ miles westward of Baba island is Cape Palamida (*Dibar ban*), a clear and well-defined headland, and 6 miles further west-north-westward is Cape Krio, which with Tekir point forms the western termination of the Dorian promontory or ancient *Triopium promontorium*. The cape at a distance makes like an island, being only connected with the main by a low narrow isthmus. The coast of the cape consists of steep cliffs, and the land 2 miles within is 1,810 feet high. The water in the vicinity of the cape is everywhere deep. See view of Cape Krio, on chart No. 1,604.

Plan on 1,899.
Chart, 1,898.

Artificial harbours were in ancient times constructed on both sides of the isthmus: Trireme harbour, the north-western, is small and now very shallow, having only from 2 to 4 feet water, and there are also 4 feet in the entrance, which is about 26 yards wide.

Port Phriano, the south-eastern, is larger and deeper, the outer part having from 12 to 5 fathoms water, but the inner part is shallow. It was once protected by two substantial piers, which left an entrance 160 yards wide, but now narrowed to about 130 yards. The south-western pier, constructed of immense stones cramped together, is yet in a fair state of preservation, well above water, and extends into a depth of 9 fathoms. The opposite mole has been demolished by the swell, but its remains may be traced by the wash, and, occasionally, parts of it show above water. In case of necessity, small vessels will find shelter in this little harbour, or a large ship to prevent sinking, might be placed on the beach. In entering, it is advisable to keep nearer the south-western pier.

Lat. 36° 41' N.
Long. 27° 24' E.

Cnidus.—It is said of Cnidus, that there is hardly any ruined Greek city in existence which contained specimens of Greek architecture in so many different branches. Besides the artificial harbours, a few years ago there were to be traced remains of the city walls, a celebrated temple of Venus and two others, artificial terraces for public and private buildings, theatres and a multitude of other ruins. The Acropolis is on a hill 933 feet high, over the north-eastern angle of the city. To this day, traces of the ruins are very distinct and well worth a day's examination.

Charts, 1,604,
1,898 [918].
Var. 3° 45' W.

Coast.—Tekir point, projecting north-westward, is nearly $1\frac{1}{2}$ miles northward of Cape Krio, and there are upwards of 50 fathoms water within a quarter of a mile of it. Between the point and Kuchi islet 3 miles north-eastward, the coast falls back and forms a deep bay, called Tekir bay. Kuchi islet is about 6 cables in length, and separated from the main by a deep and clear channel 2 cables wide, but the north-western end of the islet is surrounded by shoal water. Between Kuchi islet and Mersinjik bay, 4 miles farther north-eastward, the coast is irregular, with two little bays, and the salient points are foul.

Chart, 1,604.

Mersinjik bay is half a mile deep with a beach at its head, close to which is the village of the same name. There is a small cove on the western side of the bay, where coasters at times wait for cargo from the neighbouring villages. The elevated land southward of the bay is 2,580 feet high.

Charts, 1,604,
1,898
Lat. 36° 46' N.
Long. 27° 30' E.

Mordala islet (*Moordavan*) about a quarter of a mile in length, and foul at each end, lies half a mile from the coast westward of Mersinjik bay. At 2 cables south-eastward of the islet, is a large rock above water, but the passage between is deep, and there are 35 fathoms midway between the rock and the mainland (*see* page 302).

KOS, known to the Turks as Stanko, is an island $23\frac{1}{2}$ miles in length in a W.S.W. and E.N.E. direction, with an average breadth of $4\frac{1}{2}$ miles, though near its western end it is contracted to a little more than a mile across. It is mountainous, especially on the south and west; an elevated ridge extends along the southern side of the island, which at rather less than one-third its length from the eastern end, is 2,870 feet above the sea; the height at the western end is 1,390 feet. The eastern portion of the northern side of the island is composed of a large tract of level and fruitful ground, which produces corn, silk, and wines; fruit trees everywhere abound. The population of the island amounts to about 9,500, mostly Greeks; the Turks are congregated in the town, and the Greeks in the villages, of which there are several throughout the island.

Plan on 1,889.

The town of Kos, stands picturesquely on the side of the ancient city, on the shore of the semicircular bay at the eastern end of the island, and in its vicinity are groves of orange, lemon, pomegranate, fig, and other trees of the Levant. On the north side of the town, is a castle erected at different dates, but chiefly by the knights of Rhodes; the walls are whitewashed and from 30 to 40 feet high, and on the northern side of the castle, is a narrow entrance into a lagoon having from one to 2 fathoms water. There is also a battery, not visible from seaward on Myli point, to the eastward of the town. The anchorage is north-eastward of the castle in 10 or 11 fathoms water, mud and weed, or in any convenient depth. There is no other port or anchorage in the island.

Vessels bound through Kos channel, should be careful in rounding the eastern end of Kos island, in twilight or at night, to avoid the low sandy point named Luro south-eastward of the town; it is difficult to distinguish, and as the water cannot be seen over it, a mistake might easily be made.

Communication.—Steamers of the Pantaleon Co. and Syrian line, call weekly.

Chart, 1,899.

Kum point, the northern extreme of Kos island, is low, sandy, and surrounded by shoal water which extends northward fully three-quarters of a mile.

Two-fathoms rock, with that depth of water over it, is $1\frac{1}{2}$ cables in length north-east and south-west, the centre of which bears N. by W. distant half a mile from Kum point lighthouse. Depths less than 5 fathoms will be found a quarter of a mile northward of this shoal spot. As the shoal is steep-to, and no satisfactory marks can be given for clearing its extremity, it should be given a wide berth in passing.

Chart, 1,899.
Var. $3^{\circ} 45' W.$

LIGHT.—At about 165 yards within Kum point, is a white house with a mast on it, from which is exhibited at an elevation of 59 feet above the sea, a *red fixed* light, visible in clear weather from a distance of 6 miles.

Lat. $36^{\circ} 55' N.$
Long. $27^{\circ} 19' E.$

This light, with the *white fixed* light on Hussein port northward of it, marks the Kos channel at night (*see* page 321).

Kappari channel (*Pserimon Bogazi*).—The northern coast of Kos is bordered by shoal water, which, abreast of Cape Russa of Kappari island (page 322), extends northward beyond three-quarters of a mile and nearly into the middle of Kappari channel. Vessels should keep rather on the Kappari side, where the water is deep.

GULF OF KOS.—This gulf takes its name from the island of Kos, which lies at the entrance, dividing it into two channels of unequal breadth, the northern and narrower called the channel of Kos, being about $2\frac{1}{4}$ miles wide; whilst the southern, or that between Kos and the Dorian promontory, is a little more than 7 miles wide. From the island of Kos, the gulf extends 50 miles in an easterly direction, the larger portion being about 12 miles in breadth, but its inner part called Giova bay for the last 6 miles forms a peculiar canal-like shape, and is from 3 to $1\frac{1}{2}$ miles wide. The water in the gulf is of great depth, gradually decreasing, however, towards the eastern end, where it is available for anchoring.

Charts, 1,604,
1,898.

Aspect.—The scenery is magnificent; the inner part bounded on the north by precipitous mountains, falls in a series of cliffs nearly to the water's edge. On the southern side, there is a succession of broken hills and deep ravines, with small patches of cultivable ground, in places well watered, and covered with luxuriant vegetation.

People.—There are but few inhabitants or villages near the coast, which is only visited at certain periods by husbandmen or shepherds; but the numerous remains of both ancient and modern buildings, prove that in former times it must have been densely peopled.

Malaria.—In the summer months, from June to October, or in some seasons even before this period, the gulf at the upper part particularly, is abandoned by the few inhabitants in order to escape sickness, which, combined with the absence of fresh water, may account for the scantiness of the population.

In all the small ports or islets on the south-eastern side of the gulf, where alluvial deposits have extended the mouths of the small streams which run into the sea,—the care necessary to keep them clear being wanting,—they have become in most instances a pestiferous swamp, the exhalations from which, are most prejudicial to human life, and perhaps form an additional reason why the secure and beautiful harbours in that part of the gulf are untenanted.

Water.—There appears to be a great want of fresh water on the coast in every part of the gulf, and although the Turks have tried to remedy the evil, by constructing large and solidly built tanks in

Chart, 1,604.
Var. 3° 45' W.

almost every small nook along the northern side, yet, from the scarcity of inhabitants, the channels which feed them from the sides of the hills are not kept clear, and therefore the supply which should run into them during the rainy season, is wasted; consequently they are generally empty, or the water is bitter and unwholesome.

The streams which water the small plains, find an outlet in the low marshy ground in the ports and inlets, but owing to the flat nature of the land, are salt some distance in, and can only with difficulty be made use of for watering, by carrying barricoes or small casks up the valleys.

Winds.—The winds in the gulf are irregular, but during summer, land and sea breezes have been experienced.

Lat. 38° 45' N.
Long. 27° 31' E.

COAST.—From Mersinjik bay (*see* page 310), the northern coast of the Dorian promontory trends E.N.E. $8\frac{1}{2}$ miles to Cape Shuyun (*Shah-hin burnu*), projecting from the high land elevated, 1,140 feet, $1\frac{1}{4}$ miles within it. The high mountainous land within this part of the promontory, is from 2,580 to 3,850 feet high. The coast from Cape Shuyun, trends eastward to the creek of the Dorian isthmus, a distance of 19 miles, forming a succession of small sandy bays with low rocky points, the land gradually rising within to the elevated ridge which runs through the eastern part of the promontory.

Mount Emeji, a bold rocky elevation 2,440 feet high, is nearly a mile inland; its extremity forms Cape Emeji, $8\frac{1}{2}$ miles eastward of Cape Shuyun.

Shoal.—At $3\frac{1}{2}$ miles eastward of Cape Emeji, are three points, named Uch Chatal; three-quarters of a mile beyond the eastern, is a rocky shoal with $1\frac{1}{2}$ feet water on it. The shoal is nearly one-third of a mile in length within the depth of 5 fathoms, and about the same distance from the shore; between, there are from 5 to 18 fathoms water.

Anchorage.—There is no anchorage anywhere along the coast, though here and there close in shore, a vessel with steam power, might drop an anchor for temporary purposes with off-shore winds.

Murdubek bay, in the south-eastern part of the Gulf of Kos, is about $2\frac{1}{2}$ miles deep, and 2 miles wide, with one or two little bays, the salient points of which are foul. There are anchoring depths round the inner part of the bay, but it is open to the westward, and there is no shelter except with off-shore winds. Dorian Creek, in the southern part of the bay, has only accommodation for small vessels; a sunken rock lies off its east point of entrance.

From Murdubek bay, the whole coast north and eastward is wild, broken, and indented with numerous bays and inlets with projecting points.

Plan on 1,533.
Lat. 36° 51' N.
Long. 28° 2' E.

Atmak point.—Morphébet point, on the northern side of the entrance to Murdubek bay, is surrounded by shoal water; at one mile northward of it, is an irregular tongue of land projecting 6 cables seaward, and also foul, named Atmak point. Between the two points, is an inlet nearly a mile deep, converging to its head where a stream runs into it.

Shoal.—North-westward of Atmak point, is a shoal more than $1\frac{1}{2}$ cables in length north-west and south-east, on which the sea breaks. It is separated from the shoal ground surrounding Atmak point by a passage about a cable wide, with 10 fathoms water in mid-channel.

YEDI ATALA ISLETS.—Between Atmak point and Koyun cape $3\frac{1}{4}$ miles N. by E. $\frac{1}{2}$ E. of it, the coast forms a bight 2 miles deep, and in the south-eastern part is a chain of four islets named Yedi Atala, extending over a space of more than $1\frac{1}{2}$ miles, and covering an area within, sufficiently large for several vessels. A convenient anchorage is inside the third islet counting from the north-east, and off the entrance of a little creek. The channel in, between the second and third islets, is narrow, and a reef runs off from the south-west end of the second islet, but it can be seen. There is no ship-channel between the western islet and the next one. The entrance to the little creek just alluded to, is less than 100 yards wide; there are 13 fathoms in it, and though there is room for a small vessel, there is no inducement to enter.

Rock.—Vessels intending to anchor in either of the bays southward of the islets, can enter by the western channel, though there is an awkward rock in the centre, with $2\frac{3}{4}$ fathoms water on it, which can, however, be avoided by keeping near the western islet; the shore on the southern side of the channel is shoal, and the passage southward of the $2\frac{3}{4}$ fathoms rock is not recommended. The best anchorage is in 15 fathoms, nearly in the centre of the western bay.

Three-foot rock.—This rock, 3 feet under water, is difficult to see, as it forms a pinnacle on which the sea never breaks. It lies with the centre of the islet in the middle of the bight and northward of the Yedi Atala islets, bearing about S. by E., distant from the islet 2 cables. The rock also lies on the line joining the islet to the bluff cliffy point on the north. There are 38 fathoms water half a cable westward of the rock.

Karamuk rocks.—Between Cape Koyun (northward of Yedi Atala islets) and Cape Balisu $1\frac{1}{4}$ miles farther north, the coast forms another bight, a mile deep; at nearly one-third of a mile off the south-western face of Cape Balisu, is a danger named Karamuk rocks, with less than 6 feet water on them, about 2 cables in extent, with 7 fathoms water between them and the shore. Balisu bay on the northern side of the cape, more than $1\frac{1}{2}$ miles deep, is open to the westward, shallow at its head, and affords no anchorage.

From Lunguiz point on the northern side of Balisu bay, the Gulf of Kos narrows considerably, being here only about 5 miles wide, and hence to its head takes the name of Giova bay.

PORT DEREMEN (*Deremen Buki or Mill creek*).—The entrance to this port is $4\frac{1}{2}$ miles eastward of Lunguiz point, the coast between forming three bays or inlets, with patches of rock, and shoal water round the salient points, but there are no off-lying dangers. Port Deremen has two unequal arms running southward; the westernmost, called Port Gharb is narrow, and three-quarters of a mile deep, with from 7 to 17 fathoms water, but of no use except in case of necessity.

The eastern arm, Port Deremen proper, is more commodious, though narrow, and indented with creeks on either side; it is a little more than a mile long, with depths of from 5 to 17 fathoms, mud bottom.

The entrance to Port Deremen, is between Gharb point on the west, and Pelid and Dairi islets on the east; the latter islet, the larger of the two, is 150 feet high, and 4 cables southward of the former.

Water.—At the head of this arm there is much swampy ground, and three streams which run into it are lost. By carrying barricoes up the small valley in the south-western corner, a little water may be procured.

Plan on 1,533.
Var. $3^{\circ} 40' W.$

Lat. $36^{\circ} 53' N.$
Long. $28^{\circ} 4' E.$

Chart, 1,604.

Plan on 1,533.

Plan on 1,533.
Var. 3° 40' W.

Products.—The trees on the low ground between the hills near the mouth of the streams, produce great quantities of gum storax, which is annually collected and exported to Italy for fuel.

The tree, which only grows in the rich alluvial soil about the mouths of the small streams, much resembles the sycamore in appearance, and emits a most delicious perfume. The few men employed in gathering this gum look more like corpses than living beings, owing to the constant attacks of fever they are subject to in these unhealthy places. There are no permanent inhabitants. Wild boars are numerous, and hyænas not uncommon. Plenty of wood may be had by cutting, but it is chiefly pine, and not lasting as firewood.

Lat. 36° 57' N.
Long. 28° 12' E.

Shoals.—A rock, with 16 feet water on it, lies one cable southward of Pelid islet, and another shoal extends northward from Dairi islet, but both these shoals are out of the usual track.

Directions.—In proceeding into Port Deremen, keep in mid-channel and anchor where convenient; the small promontory on the eastern side of the port should be given a berth of nearly a cable, so as to avoid the spit running off it.

Chart, 1,604.

Seyut bay (*Chanak Liman*).—This bay, north-eastward of Port Deremen, is roughly semicircular, $1\frac{1}{2}$ miles wide, and possesses in the southern part an inlet fit for small vessels with good holding ground. A stream discharges into the inlet, and a Roman paved road runs through the woody morass at its head, which shows it to have been a port of some traffic in former days; at present there are no permanent inhabitants. The islet of Yelu (*Karjah*), half a mile in length, lies on the eastern side of the bay, and shelters the inlet from north-easterly gales. A small inlet, Kesr cove, lies between Port Deremen and Seyut bay.

Plan on 1,533.

SHEHIR OGHLAN ISLANDS (*Senu nisi*).—At a mile northward of Yelu islet, is a tongue of land terminating in Balu point, which is foul nearly three-quarters of a cable off; beyond the point are the three Shehir Oghlan islands. These islands form a snug little anchorage, and from the complete way in which they, with the coast adjacent, have been fortified, it would appear to have been formerly a place of some consequence; at present there are no inhabitants. Between the islands, and nearly equidistant, or about one cable from each, there is good anchorage for small vessels in about 7 fathoms, mud bottom. (*See views on chart, No. 1,604.*)

Lat. 37° 0' N.
Long. 28° 15' E.

Tomb island, the smallest of the three, so called from having a single small white marble sarcophagus on it, shelters the anchorage from north-easterly winds.

Snake island, the northern and next in size, abounds in those reptiles, and has evident marks of a line of fortifications running round it, and many remains of square buildings.

Castle island, the largest of the three, is nearly half a mile in length east and west, and from the western end, a tongue of land projects north-eastward, forming a snug little bight on that side of the island. Towers and walls on this island, beautifully built, were a few years ago to be distinguished, though, being overgrown with shrubs and trees, some trouble was requisite. On the eastern and highest end, there appears to have been a sort of citadel, in the Hellenic style, but round the other parts of the island the architecture is chiefly Cyclopean. The towers standing at intervals round the eastern end, were all in good preservation.

The main coast eastward of the islands was also covered by similar walls and towers, and many broken sarcophagi, all of which had been violated. The whole point on the mainland opposite the islands is thickly covered with shrubs, which render it difficult to make much research among the ruins; enough, however, was seen to show that it must have been a place of some importance.

Plan on 1,583.
Var. 3° 30' W.

Water.—There is a small spring on Castle island, from which water was obtained sufficient for a crew of 80 men.

DANGERS.—A rocky shoal, partly awash, called Duck rock, extends about a quarter of a mile westward from Castle island; a shoal also extends half a cable off the south-eastern point of the island, with $2\frac{1}{4}$ fathoms water on it.

At $2\frac{3}{4}$ cables N. $\frac{1}{2}$ E. from the north-east extreme of Snake island, with the eastern point of Castle island a little open eastward of Snake island, is another rocky shoal about half a cable in length, with $2\frac{1}{2}$ fathoms on it. The passage between this latter shoal and Snake island, is clear, and at a cable from the island the depths are from 7 to 17 fathoms.

Directions.—Vessels from the north-east, when about three-quarters of a mile from the islands, should keep Tomb island open its breadth westward of the point of the coast opposite, and proceed in, nearly on this line, passing midway between the point and Tomb island; when the southern side of Snake island is open south of the southern end of Tomb island, steer towards the low hummock on the northern end of Castle island until past Tomb island, then edge to the southward and anchor.

In entering by the south channel, keep near the point of the coast, so as to avoid the shoal extending from the eastern point of Castle island, and steer northward with the mainland coast aboard until nearly up to Tomb island, when proceed as before directed.

Vessels of moderate draught may also enter between Snake and Castle islands by keeping in mid-channel, the shoalest water being $3\frac{1}{4}$ fathoms, sand. The water is clear and the bottom so distinct that the depth appears much less than it really is. Castle island forms with Balu point southward of it, a bay about three-quarters of a mile deep, with a petrified beach at its head. A little valley runs inland from the head of the bay; it is uncultivated, but rich in natural vegetable productions; wild clover and myrtles of great height are plentiful, as well as many other flowering shrubs. There is anchorage in the bay under favourable circumstances, and the bottom is mud, though the water is rather deep, but it is exposed during westerly winds to the whole fetch of the sea in the gulf.

PORT GALLIPOLI.—This port, which still bears its ancient name, is about three-quarters of a mile eastward of the Shehir Oghlan islands, and affords good and secure anchorage. On the northern side of the entrance, is the islet of Bekchi, a quarter of a mile in length, and from it a rocky shoal extends 3 cables westward, having on it from 3 to 4 fathoms water, but near its extremity only $1\frac{1}{4}$ fathoms. No clearing-marks can be given owing to the nature of the coast, but the distance from the extremity of the shoal to the south shore of the entrance is nearly half a mile, and the southern side should be kept aboard. The centre of Snake island in line with the point west of the port leads on to the shoal.

Lat. 37° 0' N.
Long. 28° 17' E.

The port is upwards of a mile deep, having from 23 to 7 fathoms water. Two streams run into the sea at its head through low alluvial soil, and near the mouths of the streams, oysters are plentiful; the water, as usual, is not fresh until some distance up. On either side

Plan on 1,533.
Var. 3° 30' W.

of the low ground is a conical hill, on each of which are the remains of ancient forts. A small farm lies up the valley, where milk and cheese can at times be procured.

It is advisable never to sleep ashore in summer or autumn, as the malaria is dangerous.

The plain at night abounds with wild boars and hyænas, whose cries mingled with the barking of dogs and whining of jackals, render the concert anything but pleasing. There are very few, and those only occasional, inhabitants.

Lat. 37° 0' N.
Long. 28° 17' E.

Anchorage.—The best anchorage is in 12 fathoms, mud, about 3 cables from the shore at the head of the bay.

Danger.—In entering Port Gallipoli from the eastward, care should be taken to avoid a reef which lies $3\frac{1}{2}$ cables off shore, and bears N.E. $\frac{3}{4}$ N. distant $5\frac{1}{2}$ cables from the north-east extremity of Bekchi islet. The reef, about 2 cables in length east and west, has only 4 feet water on it, and 3 and 4 fathoms round it. It can be seen by keeping a good look-out.

Chart, 1,604.

GIOVA BAY and PORT.—Between Port Gallipoli and the base of the high mountains on the north, Giova bay resembles a broad canal, being only $2\frac{1}{2}$ miles wide, decreasing to $1\frac{1}{2}$ miles at the port or anchorage of Giova, 5 miles eastward. With the exception of the reef just mentioned, and the shoal ground bordering the low shore at the head of the bay, there are no dangers. As the water shoals gradually a vessel may anchor in any convenient depth by the lead; the holding ground at Port Giova is most tenacious.

Miasma.—The River Kadin rises a short distance within the head of the bay and inside the bar is 3 fathoms deep; it receives several strong salt springs in its passage to the sea, and these mixing with the fresh water cause such a rank and unwholesome vegetation round the small swampy island in the entrance, that the miasma arising from it proves fatal to the inhabitants of the small village in its neighbourhood, who are obliged in consequence to abandon their habitations for a certain time every year.

Ancient buildings.—Several remains of ancient buildings indicate this part of the Gulf of Kos to have been the site of a town (perhaps ancient *Bargassa*), and some fortifications, and a paved road leading to Marmarice and crossing the River Giova by an ancient bridge, leads to the supposition that it was a town of some consequence. The idea is strengthened by several tombs having been found cut in the cliff about 2 miles eastward of Port Giova; they are somewhat in the style of those at Petra, and evince considerable skill, as well as opulence on the part of the proprietors. The tombs are of the mixed Egyptian and Greek orders, the doors and entrances having the inclined sides; the largest is completely isolated, and cut out of the living rock, and so perfect as to be easily delineated. Some way below the present bridge (an ancient one), is another, overthrown as by an earthquake; it appears to have been an ancient and admirably constructed work.

Fauna.—In the mountains and ravines on both sides of this part of the gulf, wild beasts are still plentiful. Leopards, lynxes, hyænas, brown bears, wolves, jackals, and wild boars are occasionally encountered. The leopard is harmless if unmolested, but if fired at, although not struck, attacks, and is a most formidable opponent conquered only by death. The leopards and hyænas attack the cattle and sometimes do much mischief. Deer are said to be plentiful.

Produce.—The plain of Giova is only partially cultivated. The principal exports from this port and the surrounding coasts consist of valonia, corn, timber from the neighbouring forests, gum storax, and quantities of leeches. The leeches are caught in the marshes round the head of the bay, and packed in mud in small half-casks with a piece of perforated tin on the top as breathing holes; they are sent principally to Italian ports, and form a source of profit to the miserable inhabitants of this part of the coast, who look cadaverous, and are apparently not long-lived. Honey is also collected, and the quantity of wild heath and myrtle which grows all over the hills on the south side of the bay, and on which the bees principally feed, imparts a delicious flavour to the honey not often met with elsewhere.

Chart, 1,604.
Var. 3° 30' W.

Supplies.—There is nothing to be procured except a few fowls. Fish in great quantities may be caught with the seine, more particularly off the mouth of the River Kadin. In this river, which is a mixture of salt and fresh water, are vast numbers of large grey mullet, but they are said by the neighbouring peasants to be highly poisonous, and they never eat them.

Ancient forts.—Almost all the eminences surrounding the gulf have marks of fortifications of ancient date. Altin Sevresi, south-eastward of Seyut bay, 1,500 feet high, and nearly inaccessible, has the ruins of a very strong fort on it.

Lat. 36° 56' N.
Long. 28° 17' E.

Elevated plains.—On the elevated plains which lie among the mountains in this direction, are occasionally numerous flocks and herds, and droves of camels, driven here during the dry season, when herbage fails in the lower country.

Aspect.—From Port Giova westward to Keramos, the land on the northern side of the bay is of a highly interesting character, rising precipitously from the water's edge upwards of 3,300 feet, clothed with the brightest verdure, and crowned with forests of oaks, pines, elms, &c. Mingled with towering rocks, and intersected with deep ravines (the haunt of numerous wild beasts), it has an appearance of primeval grandeur not often met with, and forms a strong contrast to the land on the opposite side of the bay, where the hills are of a tamer nature, softer aspect, and of a much more moderate elevation.

Akbuk bay.—Mount Keranda or Keram dâgh, on the meridian of 28° 10' E., is 3,160 feet high, and a little westward of this meridian is the promontory of Akbuk, projecting nearly 1½ miles south-eastward, terminating in the cape, with the bay of the same name on its north-eastern side. The south-western part of the head of the bay is shoal and rocky, but on the northern side anchorage may be had in 14 fathoms water, sand and weed. On the western side of the promontory is another bay, but smaller, known as Tcham Altee, with a beach at its head, and open to the southward.

Lat. 37° 3' N.
Long. 28° 10' E.

Keramos bay is 6½ miles westward of Cape Akbuk; the coast between is nearly straight, and is the base of elevated land rising from the sea 1,870 feet high, with deep water all along it. Vessels in Keramos bay should anchor near the shore, as the water is deep, there being 17 fathoms stiff mud at a third of a mile off. The southern extreme of Cape Akbuk should be in line or just open of the bluff with a little rocky islet off it, eastward of the bay. It is exposed to southerly winds, but there is no great fetch for the sea.

Chart, 1,804.
Var. 3° 40' W.

Supplies.—Neither wood nor water can be procured, but fish may be caught with the seine.

Oren point, on the western side of the bay, is steep-to; but Keramos point westward of it, should be given a berth of half a mile, as the water round it shoals suddenly.

Vessels may also anchor, if necessary, in the bight westward of the latter point, but it is not so well protected as Keramos bay.

Keramos point forms the south-west extreme of a small plain about $1\frac{1}{2}$ miles square, on which are the ruins of the ancient city of *Keramos*, which, though not of great extent, contained some highly ornamental buildings and temples which now lie overthrown, apparently by an earthquake. There is still enough left to show the former wealth and consequence of its inhabitants. The number of sarcophagi is very great, and they are arranged outside the principal gate on the east side of the city in two lines, forming a continuous avenue of considerable length; they are very massive in structure, and have all been opened.

Ancient buildings, &c.—Outside the city are some Corinthian capitals and fluted columns, with well-executed representations of amphoræ and wreaths of grape vines, which lead to the supposition that on this place a temple of Bacchus once stood; the columns are in excellent preservation, but overgrown with shrubs and trees.

The walls of the city which are plainly to be traced, and in some places perfect, are principally Cyclopean mixed with Hellenic masonry, and defended by square towers built in them at unequal intervals. They are carried up the foot of a range of hills joining the north side of the city, on which side, crowning one of these hills, is a square fort surrounded with triple walls, probably the citadel. Many remains of massive and large buildings exist both within and outside the city walls, but the most interesting and perfect, is a gateway of white marble standing in solitary grandeur outside the walls in a cornfield. It is in excellent preservation, most elaborately sculptured, and looks nearly as fresh as if it were but recently erected. It combines the Egyptian style with the Greek, as the sides fall inwards from the base, but the ornamental parts are Greek in character and design. The same mixed style of architecture is met with in the gulf farther eastward.

Without the city, to the eastward, is the base of a very large building, of considerable elevation, and built of immense squared stones. The superstructure no longer exists to enable a judgment to be formed as to the nature of it.

Stream.—The plain is watered by a small stream which runs through the centre in winter, and falls into the sea at Oren point. The stream is dry during summer, except some stagnant pools, which, in July and August, cause the vicinity to be very unhealthy.

Lat. 37° 1' N.
Long. 27° 59' E.
(Keramos point).

COAST.—Between Keramos point and Cape Vasilika, 7 miles westward, the coast forms low shingle points with cultivated plains between them, the hills in the rear being well-wooded and backed by high mountainous land. A small village stands about 3 miles westward of Keramos point; farther on, two large tanks, one at 2 miles, the other at $3\frac{1}{2}$ miles from Cape Vasilika, are conspicuous objects, and with their domes and white-washed walls, contrast pleasingly with the dark foliage of the hills.

Vasilika bay, on the western side of the cape, is about two-thirds of a mile deep, and in its north-western corner is a well sheltered anchorage for small vessels in 13 fathoms water, but there is nothing to be obtained here.

Chart, 1,604.
Var. 3' 45' W.

A small shoal extends off from the western side of Cape Vasilika, and another shoal from the point next west of the entrance to the bay.

Alakishli bay.—Westward of Vasilika bay are several indentations, and projecting points surrounded by rocks. Alakishli bay nearly 7 miles from Vasilika, has anchorage for small vessels during off-shore winds, off the middle of the sandy beach. Here are the ruins of an ancient fortress. Hermo islet lies off the southern point, with a shoal between it and the point. All along this part of the coast, there are great quantities of ironstone.

Orak island.—Westward 3 miles from Alakishli bay, is the island of Orak, a mile in length, and between it and an irregular arm of land projecting eastward, are two little islets with shoal water around them; the whole together cover a bay or inlet, named Kishle Buku. At the head of the inlet on the west, the depth is from 10 to 20 fathoms, but the holding ground is very indifferent.

Lat. 36° 58' N.
Long. 27°-37' E.

Water.—The water here should not be used, as some obtained from a well made a whole ship's company ill.

Kara Ada or Karada.—This narrow island is $3\frac{1}{4}$ miles in length in a north-west and south-east direction, and its eastern end is 5 miles from Orak island. A little islet or rock lies close off its southern point where there is a small inlet, and the northern coast is bordered a little off by shoal water. The island has evidence of ancient fortifications on its summit; in its northern part towards the centre is a remarkable cave, out of which flows a volume of hot water, which, gradually cooling as it approaches the sea, affords a snug retreat to the seals which are always found located there.

Kara Ada lies parallel with the coast, with its north-western end south of Budrum; the narrowest part of the channel which separates it from the main is about half a mile wide and 12 fathoms deep, but either side is bordered a short distance off by shoal water. Vessels under steam may take this channel on their way to and from Budrum, but a sailing vessel should be prepared for baffling winds.

BUDRUM BAY.—Taking Khatar point as the western entrance point, Budrum bay is $1\frac{1}{4}$ miles in length and about $1\frac{1}{4}$ miles wide at the entrance.

Chart, 1,899

Khatar point is surrounded by reefs, and a detached patch lies off it, about a foot above water, on which stands a stone column 13 feet high.

Sighi shoals.—To the southward of Khatar point are two other small detached patches, named Sighi shoals, the northern patch being separated from the patch above water by a distance of a third of a mile, with 22 fathoms water midway. The Sighi shoals are $1\frac{1}{2}$ cables apart, the northern shoal having $2\frac{3}{4}$ fathoms on it, the southern $2\frac{1}{2}$ fathoms, and between the two there are 20 fathoms water (*see* views taken on Sighi shoals on chart No. 1,604). The outer Sighi shoal bears S. $\frac{1}{4}$ W. distant two-thirds of a mile from Khatar point, and vessels should not pass north of it.

The little islet of Utchian, S. 62° W., open southward of Guirejik island, leads southward of Sighi shoals; Kaplan point, on the

Chart, 1,899.
Var. 3° 50' W

western side at the head of Budrum bay, N. 13° E., open of Deguir point, leads eastward of the shoals. Mount Elias of Kos island, kept more than twice its breadth open of Guirejik island, also leads south of Sighi shoals.

Man on 1,606.

The shores of Budrum bay are bordered by a narrow bank, and about a third of a mile southward of Meshrik point on the eastern side, is a small rocky point to which it is necessary to give a berth of 2 cables.

Lat. 37° 2' N.
Long. 27° 28' E.

Rocky patch.—Kalessi point separates the bay of that name on the east, from Budrum harbour on the west, and on the point, is situated the castle of St. Peter. S.E. by S. $1\frac{3}{4}$ cables from the south-east angle of the castle, is the south-west end of a rocky patch with a least depth of $2\frac{1}{2}$ fathoms over it.

The castle of St. Peter is whitewashed, and St. Georgio point is walled round, with the base of the wall in the water.

Anchorage.—The anchorage is in from 11 to 14 fathoms, mud and weeds, with the south-eastern angle of the castle bearing about N.E. by N.; Kaplan Kalessi tower N.W. $\frac{1}{4}$ W.; and Deguir point S.W. by W. $\frac{1}{4}$ W., or a little farther off if necessary, protected in a measure from southerly gales by Kara Ada. Kaplan Kalessi tower over Kaplan point is all that remains of the ancient fortress of Salmacis.

Budrum harbour is a circular basin about a third of a mile in diameter, with the ruins of ancient moles on either side of the entrance. The deepest water is about the centre, and the bottom consists of weed, but the best anchorage is rather westward, being more out of the way; it is very shallow all round near the shore, fast filling in, and fit only for small vessels. It is surrounded by a complete amphitheatre of hills, and encircled by the remains of the ancient walls of *Halicarnassus*, on the site of which city the modern town of Budrum is erected.

LIGHTS.—On the small islet on the west side of the entrance to Budrum harbour, two *white fixed* lights placed vertically are exhibited from a pole; the upper light is elevated 52 feet above the sea, and should be visible in clear weather from a distance of 10 miles.

Ancient remains.—The ancient walls are plainly visible, and in some places in good preservation; within its circumference are the ancient theatre, and some columns of a temple to Bacchus, with the base of a large building which might have been that of a mausoleum. Many fragments of basso-relievo are amongst the ruins, but the most interesting of ancient remains, those of the famous tomb of Mausolus, were embedded in the walls of the castle, the sculptures from which are now in the British Museum. The small plain surrounding the town is covered with ancient remains, but difficult to find, as the ground is cultivated with figs, grapes, corn, &c.

Castle of St. Peter.—The castle was built by the Knights of St. John and has many traces of the knights in escutcheons in the walls of the battlements. Its whitewashed walls, with the surrounding houses, groves, and gardens, form a pleasing aspect from a distance.

Supplies.—Provisions are obtainable, but water is scarce, and indifferent.

Communication.—Steamers running between Smyrna and Mersina, Karamania, call weekly.

Gumbet bay.—There is anchorage in Gumbet bay, westward of Budrum bay, in 14 or 15 fathoms, but it is open to the south, the shore

Chart, 1,899.

all round is bordered by shoal water, and there is nothing to attract a vessel there. Chart. 1,899.
Var. 3° 50' W.

Petasa and Biteh bays.—These two bays are separated from Gumbet bay, by a tongue of land projecting $1\frac{3}{4}$ miles southward. Close to its south-eastern part, is the island of Guirejik, two-thirds of a mile in length north and south, with an islet between its northern end and the coast. There is a passage for small craft between the islands and the main, but none between the islands themselves.

The tongue of land forms with the coast westward of it a deep bight, nearly in the centre of which is the islet of Parthena, about a third of a mile in length, and between the islet and northern shore is a mud bank with $4\frac{1}{2}$ fathoms water on it. Petasa bay, in the north-eastern corner of the bight, is frequented by small vessels, and is secure in any wind. Biteh bay, in the western part of the bight, affords anchorage in from 15 to 17 fathoms, good holding ground, with the extreme of Biteh point about S. $\frac{3}{4}$ W., and the north extreme of Parthena islet E. $\frac{1}{4}$ S. The shore all round the bight is bordered by shoal water.

Water.—In the little cove on the western side of Biteh point, is a small run of water. The adjacent country is fertile, and well inhabited.

Aspat rock.—At $2\frac{1}{4}$ miles S.S.W. $\frac{3}{4}$ W. from Biteh point, and a little more than three-quarters of a mile from the coast of Cape Petera, is Aspat rock above water, with 20 fathoms close to it.

Utchian islet, less than a cable in diameter, with shoal water extending from its southern side, lies a third of a mile southward of Cape Petera, and between there are 10 to 18 fathoms water. Lat. 36° 57' N.
Long. 27° 20' E.

KOS CHANNEL between the shoal extending from Kum point (the northern extreme of Kos island) on the south (*see* page 310), and Magpie rock on the north, is contracted to $1\frac{1}{2}$ miles in width. The coast of the mainland on the northern side of the channel is irregular, indented with bays, and bordered by shoal water.

Magpie rock, with only 4 feet water on it, lies W. by S. $\frac{3}{4}$ S. distant half a mile from Arkialla point, with 7 fathoms between it and the shore. The marks for it are Pasha rock in line with Chuka islet (one of the Karabaghla islands) N.W. by W.; and a white patch on the shore in line with Chifut Kalessi, a conspicuous hill with the ruins of an old castle on it, bearing about N. 55° E.

The southern end of Kara Ada S. 89° E. open southward of Utchian islet, leads southward of the rock; and Chuka islet well open south-westward of Pasha rock, leads south-westward of it. (*See* views on chart No. 1,604.)

Pasha rock, which is just awash, lies a quarter of a mile from Hussein point, and is surrounded by a reef which extends nearly 2 cables north and south.

There is a narrow channel inside the reef, through which 3 fathoms water may be carried by keeping Karabaghla point N. by W. $\frac{1}{4}$ W. just open westward of Ereno point.

Cape Petera S. 86° E. open southward of Arkialla point, and the summit of Kato island in line with the eastern end of Karabaghla island, bearing N. 22° W., lead respectively south, and west of Pasha reef.

LIGHT.—At 60 yards within Hussein point, is a white house with a mast on it, from which is exhibited at an elevation of 82 feet above the sea, a *white fixed* light, visible from a distance of 10 miles. This light,

Chart, 1,899.
Var. 3° 50' W.

and the *red* light on Kum point, the northern extreme of Kos island, mark the Kos channel at night. (See page 311.)

Lat. 37° 1' N.
Long. 27° 15' E.

KARABAGHLA ISLAND is the largest of a group consisting of about a dozen islets and rocks; Karabaghla is upwards of a mile in length north-east and south-west, and consists of two peninsulas united by a low sandy isthmus. The northern peninsula is 500 feet, and the southern 367 feet high. The island is skirted by small islets and rocks on the west and south, and at $1\frac{1}{2}$ miles west of it, is the conical islet of Atsaki, less than a cable in diameter, with depths of from 25 to 40 fathoms between.

Lodo islet, 3 cables south-westward of Lepto, at the southern end of Karabaghla, has a reef extending $1\frac{1}{2}$ cables south-westward, and should be given a wide berth. At about $6\frac{1}{2}$ cables southward of the south-west end of Karabaghla, is the little islet of Chuka, steep-to, and one of the marks for Magpie rock. Eastward of Chuka, is the larger islet of Malathro, with rocks above water at either end, and the two Kruso islets north-westward, with shoal water round them.

The coast of the mainland eastward of the islands, is bordered by shoal water, which extends off in places more than 4 cables; the passage between the islets and main, is called Karabaghla channel, and the passage between Chuka islet and Kappari, is called Chuka channel.

Kato islet, about $2\frac{1}{10}$ miles northward of Karabaghla, is 4 cables in extent, with an irregular rocky coast surrounded by shoal water.

Sponge rock.—Equidistant from, and a little eastward of a line joining the north-eastern ends of Karabaghla island and Kato islet, is Sponge rock, with 6 fathoms water on it. Hussein point lighthouse in line with the north-eastern extreme of Karabaghla S. 33° E., leads westward of the rock; the Kruso islets in line with the eastern extreme of Karabaghla island S. 4° W., lead eastward of the rock.

Pitta islet.—Eastward of Sponge rock, and close to the coast, is the little islet of Pitta, with 5 and 7 fathoms water between it and the shore.

Karabaghla point north-westward of this islet, has two large rocks above water off it, and southward of the rocks the coast is bordered by shoal water at the distance of a quarter of a mile.

Lat. 37° 3' N.
Long. 27° 11' E.

Kardak rocks, two in number, are small and about $1\frac{1}{2}$ cables apart, with 19 fathoms water between them; both rocks are foul about one cable off on their south-eastern sides, and they lie $2\frac{1}{4}$ miles westward of Kato islet, with deep water between.

KAPPARI ISLAND.—This island (*Pserimos*) is 4 miles in length north-west and south-east, $2\frac{1}{2}$ miles wide, and its north-eastern part is 835 feet high, with an irregular coast line indented with bays. At half a mile southward of Vasiliki point (the north-eastern point) is Sikua, a large rock above water with sunken rocks on its north-western side; a cable eastward of the line joining the rock and point, is a 3-fathoms shoal, which should be avoided.

Cape Russa, the south-eastern extremity of the island, is the termination of a tongue of land projecting upwards of a mile in the above direction; nearly a mile westward from Cape Russa, is Teseremi rock above water, a third of a mile from the shore. Cape Sphuri may be considered the south-west extreme of Kappari island, and a third of a mile northward of the cape, is a reef with a rock above water, named

Tathuro nezgla, but close to the shore. One third of a mile farther is the entrance to Pseremo cove, an inlet a third of a mile deep, with beach and the village of Pseremo at its head. Chart, 1,899.
Var. 3° 50' W.

Nikro.—On the western side of the island, is the narrow island of Nikro with an irregular coast line and skirted here and there with rocks; it is a mile in length north and south, with Nikrothikes islet at its northern end, and 3 fathoms water between them. Nikro is connected to Kappari by a ridge with 4 and 5 fathoms water on it, and the passage is nearly half a mile wide.

Kappari channel is between Kappari island and the shoal water bordering the northern coast of Kos island (*see* page 311).

PORT GUMISHLU (ancient *Myndus*).—On the mainland, Plan on 1,889. about three-quarters of a mile northward of Karabaghla point, is a bluff 290 feet high, eastward of which is Port Gumishlu, a snug inlet extending $2\frac{1}{2}$ cables northward, having from 11 to 5 fathoms water, sand and mud bottom. On the eastern side of the entrance, is an islet, connected with the main by the remains of an ancient pier, and the deep water channel here is only about 40 yards wide; the shore around the port is a sandy beach.

Rock.—A rock with 15 feet water over it lies midway between the shores of the port, bearing N.N.E. $\frac{3}{4}$ E. distant 150 yards from the east entrance point. Lat. 37° 3' N.
Long. 27° 16' E. The breadth of the channel westward of this rock between the 5-fathoms lines is 50 yards. The walls of Myndus extend over the heights north-eastward at an elevation of 500 feet, forming a square of about 700 yards, within which, are the remains of pedestals, a temple, theatre, and other ruins.

Shoal.—Paleo point is the name given to the north-west extreme of the peninsula which shelters Port Gumishlu, and from it, shoals extend N. by W. $\frac{3}{4}$ W. $3\frac{1}{2}$ cables, the least depth being 3 fathoms. This bank is steep-to on the west side.

Pondikusa and Keramidi islets.—These two islets lie about Chart, 1,546. 2 miles northward of Port Gumishlu. Pondikusa, the larger of the two, is nearly two-thirds of a mile in length north and south, surrounded by a narrow shoal, and is about nine-tenths of a mile westward of Keramidi. The latter lies in an east and west direction, having some rocks at its south-eastern end, where it is separated from the coast by a channel a cable wide, and 5 fathoms deep.

Myndus rock.—At two-thirds of a mile N.N.W. $\frac{1}{4}$ W. from the western end of Keramidi, and N.E. $\frac{3}{4}$ E., 8 cables from the northern end of Pondikusa, is Myndus rock, with $4\frac{1}{2}$ fathoms water on it, and lying right in the fairway of vessels passing between the two islets. Paleo point in line with the western side of Malathro islet, S. $\frac{1}{4}$ W., leads on the rock; to pass westward of the rock, the point should therefore be brought well open eastward of the islet. (For the Gulf of Mandelyah or coast northward of Myndus rock, *see* page 332.)

KALOLIMNO ISLAND (*Gaithuro nisi*) is nearly 2 miles in Chart, 1,899. length east and west, with an irregular coast forming on the south side several little coves; and in the central part of the north side, steep cliffs, on which side the island is steep-to; the western end is bordered by shoal water, which extends along the southern coast, where there is a sunken rock here and there close in. The little islet of Plero (*Mikro nisi*), about a cable in diameter, with a sunken rock or two at its base, lies a quarter of a mile off the southern coast, with 22 fathoms water midway between.

Chart, 1,899.
Var. 3° 55' W.

The distance from the eastern end of Kalolimno to the Kardak rocks eastward, is a little under 2 miles, and from the south-western coast to Kalimno island $3\frac{1}{2}$ miles. Both channels are clear and deep.

LIGHT.—At 130 yards within the eastern end of Kalolimno is a white stone tower, from which is exhibited at 181 feet above the sea, a *white flashing* light, the *flashes* occurring *every minute*, and visible in clear weather from a distance of 16 miles.

Lat. 37° 5' N.
Long. 27° 6' E.

Gargari islet.—Northward one mile from the western end of Kalolimno, is the islet of Gargari, about 2 cables in length north-west and south-east. The passage between is clear and deep.

Chart, 1,666.

KALIMNO.—This island is irregularly formed, its main body to the southward being about 6 miles across, and from it, a peninsula ridge extends north-westward. It is everywhere mountainous; the central ridge forms two peaks, Mount Parasiva 2,250 feet high, and the other about a quarter of a mile south-eastward of it 2,200 feet high. The coast is rugged, with several inlets, bays, and coves. The island is not very fertile, though it produces figs, wine, barley, oil, and excellent honey; for the latter it was also celebrated in antiquity.

Inhabitants.—The inhabitants amount to about 7,000, most of whom live at the Skala, or in the town of Kalimno, which stands at the foot of a steep cliff about 800 feet above the sea. Here are the ruins of the ancient town and fortress, at a little less than an hour's walk from the Skala by a good road. The inhabitants are employed as sailors, in the sponge fishery, and in agriculture. The island is subject to Rhodes, and pays a small tribute.

Sponge fishery.—Kalimno is the head-quarters of the sponge industry, about 200 vessels and nearly all the adult males being engaged in diving and fishing up sponges. They set out in May and return in September, visiting during that time the shores of the islands of Greece, the southern Sporades, and especially Rhodes, Crete, the whole extent of Syria, the island of Ruad, and finally Tunis; their vessels are so large and so well manned, that they drive the Arabs and Sicilians completely out of the field. The best sponges are usually found at a depth of from 15 to 20 feet, those found in deeper water are of little commercial value. The largest and most delicate are found on the coast of the island of Stampalia, and on one or two spots on the African littoral.

Port Kalimno at the head of a bight, at the south-eastern end of the island, and open to that quarter, is a semicircular bay about 4 cables wide, shallow, and protected on the south by a small mole, inside which, the sponge boats take shelter; the depths are 9 or 10 feet, over mud and sand. The town of the Skala is built round the shore of the bay, and the lazaretto is on the northern side. There is anchorage at the entrance of the port in from 20 to 12 fathoms water, muddy bottom, with patches of sand and weeds. The coast southward of the port is high, rugged, and steep-to.

Communication.—Kalimno can be reached by weekly steamer from Smyrna, or by boat from Budrum.

Nera and Saphonidi islets.—These two little islets lie off the southern coast of Kalimno. Nera, the larger, is a mile in length, with shoal water around its salient points; it lies half a mile from the shore,

and midway between, there are from 35 to 50 fathoms water. Saphonidi is half a mile in length, steep all round, and $1\frac{1}{2}$ miles south-south-westward of Nera, with deep water between.

Chart, 1,666.
Lat. $36^{\circ} 53' N.$
Long. $26^{\circ} 57' E.$
(Nera islet).
Var. $4^{\circ} W.$

Linaria bay.—The south coast of Kalimno is irregular, high, rugged, and bold, with deep water all along it. Linaria bay on the west coast, is an indentation about two-thirds of a mile deep, and at its head is the little village of the same name. In the valley above, are the principal of the ancient remains found in the island. The little islet of Khereaia, steep-to on the west, but foul and rocky on the north and eastern sides, lies half a mile off the northern side of the bay. Between the reef on the islet side, and the shoal rocky ground bordering the northern side of the bay and coast beyond it northward, the water is 32 fathoms deep.

Telendos island, on the west coast, is nearly $2\frac{1}{4}$ miles in length, high, clifty, skirted by shoal patches and scattered rocks here and there, with Apano islet close southward of its western end. The island is separated from Kalimno by a passage, a quarter of a mile wide, called Telendo channel; midway between the shoal ground on either side, it is clear and deep.

Argano bay.—From the central part of the main body of Kalimno, an elevated peninsula projects upwards of 6 miles north-westward, and in the light on the south-western side is Argano bay, upwards of one mile deep, with from 15 to 10 fathoms water, mud bottom, at its head. The entrance of the bay is sheltered from the south-west by Telendos island, and in front of it north-westward, is Kalavros islet, half a mile in length, and 320 feet high.

Shoal.—In the fairway to the bay, and E. $\frac{1}{2}$ S. 6 cables from the south extreme of Kalavros islet, is a rocky patch with $4\frac{1}{2}$ fathoms water on it.

Kephala, a circular projection about two-thirds of a mile in diameter, and connected by an isthmus to the central part of the south-west coast of the peninsula, forms a little bay on its south-eastern side, where there are a few scattered houses called Emporio. The shore between Kephala and the head of Argano bay is bordered by rocks, and from Toikhoi, a point half a mile north-east of Kalavros islet, they extend off nearly 2 cables.

The mountains on either side of Argano bay, rise almost perpendicularly from the water's edge to a height of nearly 2,000 feet, forming a deep ravine through which, in the rainy season, a torrent discharges into the head of the bay. H.M. ship *Antelope*, in December 1869, sought shelter here from an approaching south-easterly gale, which increased with much violence, but continued only for a few hours, when it suddenly became calm; the night was pitch dark, the rain came down in torrents, with flashes of the most vivid lightning in quick succession, and the high land surrounding the bay added to the darkness. The calm was shortly followed by a supposed gale from the northward, with heavy squalls from N.N.W. to N.E., causing the vessel to be very uneasy, and to roll heavily. At daylight, and after a most anxious night, it was determined to put to sea in preference to remaining longer; the anchors were accordingly hove up, and the vessel steamed out of what was described as one of the most dangerous little traps that a vessel could be ensnared into. Although in the bay, the squalls were off the land from the northward, at sea it was blowing a strong south-westerly gale.

Eastern coast.—The north-east, and eastern coast of Kalimno, is bold, rugged, irregular, and cut up into several bays and inlets,

Chart, 1,666.
Var. 4° W.

Chart, 1,899.
Lat. 36° 57' N.
Long. 27° 4' E.

which are of no utility, and except at some of the salient points, the water is everywhere deep.

Port Vathi.—Port Vathi is the central of three inlets on the eastern coast; it extends in between cliffs about three-quarters of a mile to a small circular beach, where there are a few houses called Vathis. Within the head of the port, is a plain, cultivated with olive trees, which extends across the island to the base of the high cliffy ridge on the west, and bounded on either side by the mountain ranges.

Skirometo point.—The south-eastern extreme of Kalimno, named Skirometo point, is $1\frac{1}{2}$ miles southward of Port Vathi, and is the termination of a piece of zigzag land forming Port Katzuni, and united about three-quarters of a mile within to the main body of the island, by a neck about a cable across. At about $1\frac{1}{2}$ cables off the northern side of Skirometo point, is Sari nisi, $1\frac{1}{2}$ cables in diameter, with 24 fathoms water between. The coast thence to Port Kalimno, $3\frac{1}{2}$ miles westward, is of the same rugged character as before, and steep-to.

Kalimno channel.—The passage between Skirometo point and Nikro island (*see* page 323), eastward of it, is $1\frac{1}{2}$ miles wide, clear and deep, and called Kalimno channel.

Chart, 1,899.
Var. 4° 10' W.

LEVITHA ISLANDS.—At $28\frac{1}{2}$ miles westward of Kalimno, and nearly 6 miles north-eastward of Liadi islets at the eastern end of Amorgos (described on page 278), is the rugged island of Kinaros, which with the rest of the Levitha group belong to Turkey. Kinaros island is 2 miles in length east and west, 1,050 feet high, irregular in shape, and with the exception of some sunken rocks close to its western extreme, the water is deep all round its cliffy coast. On the southern side of the island, is a narrow inlet nearly a third of a mile deep, with 4 fathoms water at its head, called Pnigo creek.

Lat. 36° 59' N.
Long. 26° 21' E.

Laros island, about 6 cables in length, has its north and eastern side surrounded close-to by shoal water; it lies less than half a mile eastward of Kinaros, the water between the two being from 45 to 73 fathoms deep.

Mavro islets.—At $4\frac{1}{2}$ miles eastward of Laros island, is the western end of Levitha island, and nearly midway between are the two Mavro islets. These narrow islets, the ridge of a submarine mountain, are nearly united, being separated only by a narrow cut 5 fathoms deep; they form a bend with the convex side to the northward, and together, extend over a space of $1\frac{1}{4}$ miles east and west, with depths of from 3 to 11 fathoms water along the northern sides, but on the south, and between the extremes of the islets, there are 74 fathoms.

Levitha island is rather more than 4 miles in length east and west, very irregular in shape with several bays or inlets, and towards the western end 550 feet high. The island is uninhabited.

Vathi bay at the western end of the island and open to that quarter, is narrow and more than a mile deep, with irregular soundings varying from 40 to 5 fathoms at its head. Elmino point, southward of the entrance of the bay and the south-western extreme of Levitha, has shoal rocky ground extending off from it about $1\frac{1}{2}$ cables.

Levitha harbour on the southern side, is an irregular inlet nearly half a mile deep, with from 15 to 2 fathoms water, and sheltered all round.

Nephri point, the northern extreme of the island, is the termination of an irregular tongue of land extending three-quarters of a mile northward, and is surrounded by rocks. On the western side of the point, is a little islet separated by a narrow channel with 2 fathoms water; rocks covered and uncovered, extend 2 cables westward of the islet. The water elsewhere is deep, and there are no off-lying dangers.

Chart, 1,889.
Var. 4° 10' W.

LIGHTS.—From a lighthouse on Spano point, the eastern extreme of Levitha island, two *white fixed* lights are exhibited, placed vertically, the upper light being elevated 131 feet above the sea, and visible in clear weather from a distance of 10 miles.

LERO, the ancient *Leros*, is another irregular formed island, its coast being indented with deep bays and inlets. It is $7\frac{1}{2}$ miles in length, in a north-west and south-east direction and from two-thirds of a mile to about $3\frac{1}{2}$ miles in breadth; it is of no great elevation, the highest hill, Mount Kleithi, in the north-east part of the island, being only 1,060 feet above the sea. The only town, Sta. Marina, on the declivity of a hill on the eastern side, is crowned by a ruined castle of the middle ages. The inhabitants of the island numbering about 3,000, pay tribute to the Pasha of Rhodes, and like their neighbours of Kalimno, find employment as sailors, sponge fishers, and agriculturists. The island is not very fertile, but produces fruit, honey, &c.

Chart, 1,666.

Communication is maintained by the Pantaleon Co.'s steamers which call once a fortnight.

Lero strait separates the islands of Kalimno and Lero. At the northern end of Kalimno island, are the two islets of Glaro and Nisia, which, united by rocks, together extend north and south nearly three-quarters of a mile. Nisia, the southern islet, is separated from Kalimno by a narrow passage about 5 fathoms deep. The little islet of Velona or Glaro nisi, which should be given a fair berth, lies about a cable from Theapori point, the south-eastern end of Lero, with 20 fathoms water between the two. Lero strait, between Velona islet and Glaro islet south-south-west of it, is about 2 cables wide, and in mid-channel, 30 fathoms deep.

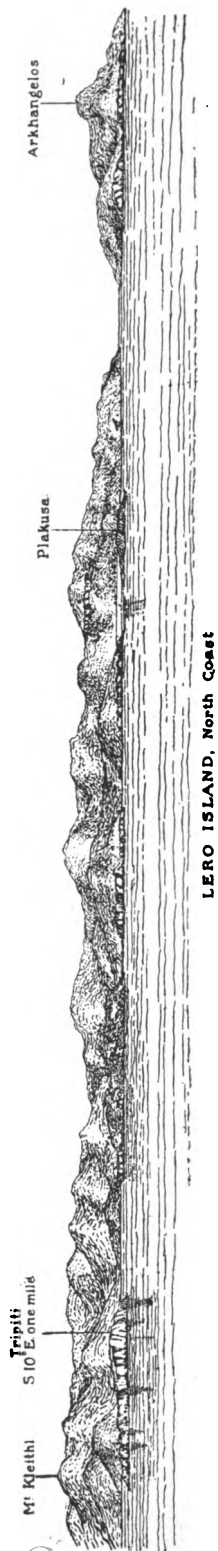
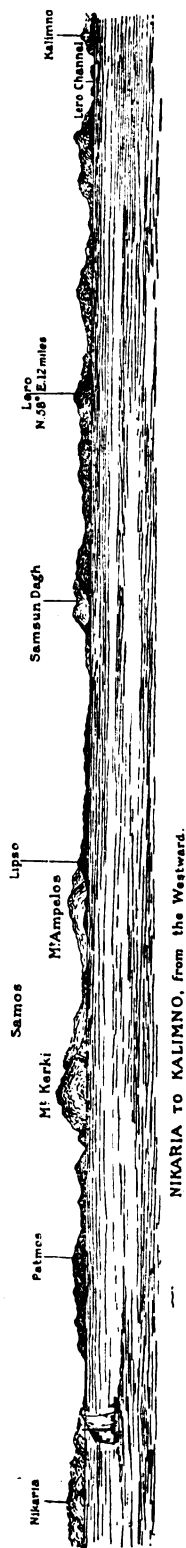
Lat. 37° 5' N.
Long. 26° 55' E.

Panale bay, on the southern side of the promontory on which the town of Sta. Marina stands, affords shelter for small coasters from northerly winds.

Alinda bay, on the eastern side of Lero, affords anchorage in from 10 to 18 fathoms water, but is exposed to easterly winds. Small coasters find shelter inside some rocks on the northern side, and also at Port Sta. Marina under the town, on the south.

The shore of the bay is skirted here and there by rocks, and in the middle of the entrance, but rather towards the northern shore, is a $3\frac{1}{2}$ -fathoms rocky shoal.

Parthani bay, at the north-western end of Lero, is three-quarters of a mile deep, narrow at its head, with anchoring depths all over it; it terminates in a basin in the north-east corner, called Agia Matrona, having 3 fathoms water. Near the southern part of the head of the bay are some ancient ruins. The island of Arkhangelos, which is irregularly formed, but $1\frac{1}{2}$ miles in length, lies parallel to the north-western end of Lero and completely covers Parthani bay. The passage between is called Pharios channel, the name of some little islets at the south-western end of Arkhangelos, and carries from 10 to about 30 fathoms



water. If induced to take this channel, keep midway and pass out northward between Plakusa and Tripiti islets, so as to avoid the 2-fathoms shoal lying about $1\frac{1}{2}$ cables off the northern point of Lero. Chart, 1,666.
Var. 4° W.

Thremona bay and Port Laki are on the western side of Lero island, and these inlets cut more than halfway into the island; Xero Kambo is at the southern end. For these and the rugged and irregular coast with the rocks and shoal patches bordering it elsewhere, with one or two islets off it, the chart must be the guide.

LIPSO CHANNEL.—The space between Arkangelos and Lipso islands, called Lipso channel, is $3\frac{3}{4}$ miles wide, and is interspersed by several islets, rocks and shoals. Chart, 1,574.

Saraki, the south-western islet, is about a cable in diameter, and lies $3\frac{1}{2}$ miles W.N.W. from the north-west point of Arkangelos, with an isolated sunken rock lying a cable off its north-eastern side. Lat. 37° 14' N.
Long. 26° 43' E.

Koreli rock.—At 4 cables S.S.W. $\frac{1}{2}$ W. from Saraki, is Koreli rock above water, and $3\frac{1}{2}$ cables eastward of Koreli rock is a $4\frac{1}{2}$ -fathoms rocky shoal; there are from 20 to 30 fathoms near these dangers, and they should be given a wide berth.

The western extreme of the Khalavra isles open eastward of Phrango islet, bearing N. 22° E. leads eastward of them.

Phrango islet, north-eastward of Saraki, is $4\frac{1}{2}$ cables in length, and 252 feet high, with rocks above and below water, lying 2 cables off its southern end; the passage between these rocks and the rock off the north-eastern side of Saraki, is nearly $1\frac{1}{2}$ miles wide, with from 45 to 50 fathoms water in mid-channel.

Miseo reef.—At 4 cables north-westward of the northern end of Phrango is Miseo reef, about $1\frac{1}{2}$ cables in extent, and partly uncovered; midway between the reef and islet, the water is deep.

The Khalavra isles are a cluster of six small islets, and two or three large rocks with sunken dangers, extending over a distance of $1\frac{1}{2}$ miles in a north-west and south-east direction. There are boat passages between the islets, and with the exception of the south-western side of the largest and western isle, shoal water extends off all round about $1\frac{1}{2}$ cables.

A patch with 7 fathoms water on it lies N.N.W. distant 3 cables from the north-west extreme of the western isle.

Between these islets on the north-east, and Phrango islet and Miseo reef on the south-west, the passage is clear and deep; between the islets and the rocks skirting the shore of Lipso, the passage is 4 cables wide, and in mid-channel 21 fathoms deep.

The Kalapodi are two islets extending over a space of 4 cables east and west, and bordered by a narrow bank, with deep water near them; they lie in the fairway of the eastern part of Lipso channel, and may be passed on either side. Lat. 37° 15' N.
Long. 26° 50' E.

LIPSO ISLAND.—Lipso island from which the channel derives its name, is $4\frac{1}{2}$ miles in length north-west and south-east, and from less than a third of a mile to about 2 miles in breadth, its north-western part being 903 feet high. Its coast is indented with bays and numerous little coves, and skirted by rocks and uneven bottom, more especially the south-eastern part.

Port Sokoro, on the south-western side, is a snug little harbour, with from 16 to 5 fathoms water, mud bottom, and partly covered from the south-westward by the Khalavra isles.

Chart, 1,574.
Var. 4° W.

Port Muskat, at the north-western end of the island, is another inlet, but of no utility.

South Aspra isles are two little islets on a 3-fathoms bank, extending eastward two-thirds of a mile from the south-eastern part of Lipso. A third islet lies close to them on the south with 8 fathoms water between.

At one-third of a mile S.E. by S. from the southern islet, is a rocky patch with $1\frac{1}{2}$ fathoms water on it.

Directions.—In steering between South Aspra isles and Kalapodi, from the westward, keep the northern end of Phrango islet, open southward of the rocks at the southern end of the Khalavra isles, W. $\frac{1}{4}$ S., until the north islet of North Aspra isles is open eastward of the south islet of the same group, N. $\frac{1}{4}$ W.

North Aspra isles, are another group of islets and rocks, covering a distance of about a mile north and south, and separated from the eastern end of Lipso by a space of half a mile from 8 to 10 fathoms deep, but the passage is contracted to about $1\frac{1}{2}$ cables wide by rocky shoal ground extending from either side, and which surrounds the islets.

Danger.—At 7 cables N.E. by E. from the north-east extreme of the northern of North Aspra isles, is a rocky shoal with $2\frac{1}{2}$ fathoms water on it. The western of South Aspra isles S.W. $\frac{1}{2}$ S., open eastward of the southern of North Aspra isles, will lead eastward of the shoal; the southern end of Grilussa island in line with, or only a little open southward of Kupaki W. by N. $\frac{1}{2}$ N., will lead north of the shoal.

Lat. 37° 20' N.
Long. 26° 45' E.

The Rephulia, are a group of small islets and rocks, covering a space of $1\frac{1}{10}$ miles north-east and south-west, with rocks and shallow water extending nearly 3 cables north-eastward from the northern islet; the south-western, the largest islet, is 217 feet high. These islets lie off the northern end of Lipso, the passage between being about a third of a mile wide, and midway from 20 to 35 fathoms deep.

ARKI ISLAND is $3\frac{1}{2}$ miles in length, north-west and south-east, with an extreme breadth of about a mile, and an irregular coast line. Off its south-western side, is the island of Grilussa, the largest of a group of four islets fronting three little inlets; at the south-eastern end of Arki island, is another group of five or six islets, but neither Arki nor the islets are of any importance. The passage between this group and the shallow water extending north-eastward from the Rephulia islets, is three-quarters of a mile wide, and in mid-channel clear and deep. Vessels in the vicinity of the Lipso or Arki groups, should avoid the salient points, and the chart should be the guide.

PATMOS (Patino), called by the Italian mariners of the Levant "San Giovanni di Patino," occupies a space of nearly 7 miles north and south, and at the northern end, where it turns south-eastward, it is about $4\frac{1}{2}$ miles east and west, but the island is very irregular in shape and the coast so indented with bays and inlets, that in places it narrows to between one and 2 cables. It is of no great elevation, the highest hill, St. Elias, being only 874 feet above the sea, and is throughout a mass of barren black rock, with generally a steep cliffy coast. The population amounting to about 2,500 is exclusively Greek, who gain a subsistence by transporting merchandise from place to place in their boats, and by periodical emigration to the continent, or to more fertile islands, where labour is required. They pay an annual tribute to the Pasha of Rhodes.

Port Skala, on the eastern side of the island, is an inlet 7 cables deep and 2 cables wide, carrying from 20 to 3 fathoms water, mud bottom. It is exposed to a long fetch from the south-east, and the winds blow over the hills in violent gusts, often shifting so as to render the port inconvenient for large vessels. About half-way in on the south-western side, is the village of Skala containing about 50 houses, and on a hill overlooking the port is the town of Patino, in the middle of which, and in the highest part of it, is the monastery of St. John the Divine, presenting the appearance of a fortress flanked with towers and conspicuous from seaward; the monastery was built in the 12th century. About half-way between the port and town, is a natural grotto, over which is a small church. The town is reached by a steep and rugged ascent, and is about half an hour's walk from Skala.

Plan on 1,574.
Var. 4° 5' W.

Communication.—The steamers of the Pantaleon Co. call every fortnight from Smyrna and other ports.

Islets.—In the bend of the coast northward of the port, are three little bays; Panagia islet lies at the entrance of the middle bay known as Agria Livadia, and two other islets, Georgio and Kudro, lie off the northern shore of this large indentation which is bordered by rocky, uneven ground.

Khelia islet, nearly half a mile in length, 369 feet high, and surrounded by rocks which extend $1\frac{1}{2}$ cables from the north and south ends, lies $2\frac{1}{2}$ miles east-south-east of Port Skala.

Chart, 1,574.
Lat. 37° 18' N.
Long. 26° 37' E.

The Sklavaki isles, a group of little islets and rocks covering a space of about 7 cables in a north-east and south-west direction, lie between Khelia islet and the eastern promontory of Patmos terminating in cape Yeranos; the isles are steep-to.

DANGERS.—**Khelia rock**, with 3 feet water on it and steep-to, lies S. $\frac{1}{2}$ W. $5\frac{1}{2}$ cables from Khelia islet, with Mount Sklaves (760 feet high) in line with the western extreme of Sklavaki islet, N. $\frac{1}{2}$ W.

Cape Yeranos, the eastern extreme of Patmos, well open eastward of Khelia islet, bearing N. 7° E. leads eastward of the rock; the north side of the hummock on Cape Yenupa, touching the south side of Trago island, bearing N. 89° W., leads southward of the rock. See views on chart No. 1,574.

Trago reef lies nearly 4 cables eastward from Trago island, is partly above water, nearly a quarter of a mile in extent north and south, and steep-to with deep water between it and the islet. From its southern end, the north side of the hummock on Cape Yenupa, and the southern end of Trago island, are nearly in line. The passage between the reef and Khelia rock, is more than a mile wide, and with the exception of the 6-fathoms rocky patch, lying two-thirds of a mile W. by S. from the southern end of Khelia islet, is deep and clear.

Ports Griko and Stavros.—Southward of Cape Trago, the coast forms a bay, and in the centre is the island of Trago, sheltering a space within it about 2 cables wide, called Port Griko. The little port is completely sheltered, and from 3 to 8 fathoms deep; the principal entrance is southward of Trago island, the northern entrance between the shoals on either side being only a little more than half a cable wide.

Port Stavros, at the south-western end of Patmos, is an indentation of the coast on the north-western side of Mount Prasson (789 feet high), and separated from Port Griko on the east, by an isthmus which is little more than $1\frac{1}{2}$ cables across, uniting the mount to the

Plan on 1,574.
Var. 4° 5' W.

Chart, 1,574.

Lat. 37° 25' N.
Long. 26° 31' E.

Chart, 1,546.

Lat. 37° 7' N.
Long. 27° 18' E.

main part of Patmos on the north. The shore of Port Stavros is bordered by shallow water and rocks, but neither of these ports are in any way utilised.

The western coast of Patmos is steep and irregular, with three or four bays, and here and there detached rocks, but as there is nothing to induce a vessel to come here, it should not be closely approached; the northern coast is ragged with projecting points, and should also be avoided.

Anedro islet and Petro Karavi.—Anedro islet lies 2½ miles north-west of Cape Zoluphi, the north-western extreme of Patmos; it is 5½ cables in length, east and west, steep and cliffy on the southern side, with one or two rocks at its base, and with from 40 to 50 fathoms water, at about a cable off.

The Petro Karavi are a cluster of rocks, extending a quarter of a mile north and south, with deep water round them, and lying 2 miles westward of Anedro island.

Furni rock, a small patch said to have only 5 fathoms water on it, lies between Anedro and Makra nisi of the Furni islands. It bears N. ½ E. distance 3½ miles from the north-east extreme of the former, and South, 1½ miles distant from the south point of Makra nisi; its vicinity should be avoided. To avoid Furni rock, Furni Boghaz, the passage between Themina and Diapori islands must be kept open. (See page 399 and view on chart No. 1,537.)

SANDAMA PENINSULA, on the mainland of Asia Minor, is 600 feet high, covers a space 2 miles north and south, by upwards of 1½ miles east and west, and is now joined to the mainland by a low isthmus a little more than a cable across. Its shores are irregular and rocky, and off its northern point are four or five detached rocks or islets. The bay of Sandama, on the southern side of the peninsula, nearly 2 miles deep, is open to the west, with rocky shores on either side, and a little islet with shoal water round it on the south, but having deep water all over the central part. On the southern side of the entrance to Sandama bay, is Myndus rock with 4½ fathoms water on it, which together with Pondikusa and Keramidi islets are described on page 323.

Pasha bay.—On the northern side of Sandama peninsula, is an inlet called Pasha bay, two-thirds of a mile deep, narrow with a rocky islet on the western side of entrance, and rocky ground bordering the eastern shore, with deep water between. The bottom within is stiff sand, and grass; the inlet is exposed to northerly winds.

Wreck rock.—At nearly two-thirds of a mile N.N.W. ¾ W. from the northern point of Sandama peninsula, is the northern of the detached rocks or islets before mentioned; it is 21 feet high, with deep water on all sides except the east, where there is a shoal patch with 2½ fathoms on it, about a cable off. The islet is called Wreck rock, from the circumstance of a large vessel sunk in 9 fathoms water, having been found there years ago with her bowsprit touching the base of the rock.

Shoal.—At 4 cables E.S.E. of the rock, and about the same distance N. by E. from the northern extreme of the peninsula, is a shoal patch with 3 fathoms water on it.

MANDELYAH GULF.—From Sandama peninsula, the southern shore of Mandelyah gulf trends generally eastward 15 miles to the head of Guvergenik bay; it is rugged and irregular, indented by deep bays, with rocky shores, projecting points, and off-lying islets, and backed by the high land of the promontory of Budrum, which in Oglu Dag reaches the height of 2,280 feet above the sea.

St. Apostola island, 5 miles to the eastward of Wreck rock and 4 cables off shore, is a mile in length north-west and south-east, and 386 feet high, with some ruins on it; its southern end is bordered by shoal water. An islet, also with shoal water around it, lies close to its north-western end. Between the shoal at the southern end of St. Apostola, and the point of the coast south-west of it which is steep and bold, the passage is a third of a mile wide, and 25 fathoms deep in mid-channel. At the eastern entrance of the passage equidistant from the island and shore, is a high steep rock.

Chart, 1,546.
Var. 3° 45' W.

Ghiul bay or Chesil Liman.—The entrance to this bay is $1\frac{1}{4}$ miles south-eastward of St. Apostola island; the bay extends southward upwards of a mile to the valley at its head, where there are some ruins, and a little back from the shore is a lagoon which communicates with the sea. An island, and a little south-west of it, a small islet, form with the steep peninsula bounding the western side of the bay, a narrow creek carrying from 15 to 20 fathoms water. There are anchoring depths all over Ghiul bay, but south-westward of the island and on the same side, is a bight where there is anchorage in from 10 to 15 fathoms, mud, sheltered from all winds except from about N.E. by E. to E. by S. The southern point of the bight is bordered by shoal water; a stream runs into the head of Ghiul bay.

Durvanda bay.—At about $4\frac{1}{2}$ miles south-eastward of Ghiul bay, is the head of a deep bight called Durvanda bay, with anchoring depths of from 18 to 5 fathoms; from here, the distance across the promontory to Budrum on the south, is a little over 3 miles as the crow flies. The salient points south-eastward of Ghiul bay, are bordered by shoal water.

Lat. 37° 5' N.
Long. 27° 30' E.

On the eastern side of Durvanda bay, at $1\frac{1}{2}$ miles from its head, are two little islets surrounded and connected to the shore by shoal water. The elevated land over the head of the bay, is 1,776 feet high.

Shoal.—Denir Liman is the name given to a small indentation about halfway between Ghiul and Durvanda bays, and off its entrance, is a shoal about $1\frac{1}{2}$ cables in extent, with 2 fathoms on it, and deep water around and inside it.

Tarandakia islets.—The two islets of Tarandakia lie in the centre of the deep bight before mentioned, and are separated from each other by a passage $1\frac{1}{2}$ cables wide, and from 5 to 7 fathoms deep; the southern islet is the higher, and 140 feet above the sea.

Tarandos (ancient Karyanda).—This island is $2\frac{1}{2}$ miles in length east-north-east and west-south-west, irregular in shape, and 498 feet high. At its eastern end, there is a village, and some ancient ruins. Shoal water extends a quarter of a mile southward of its western end, which can be avoided, as the passage between it and the Tarandakia is nearly three-quarters of a mile wide, with deep water.

Tarandos forms, with the coast eastward of it, a narrow channel about $1\frac{1}{2}$ cables wide, carrying 10 fathoms water. A small shoal extends from the island at the southern entrance; and another shoal from the mainland coast at the northern entrance.

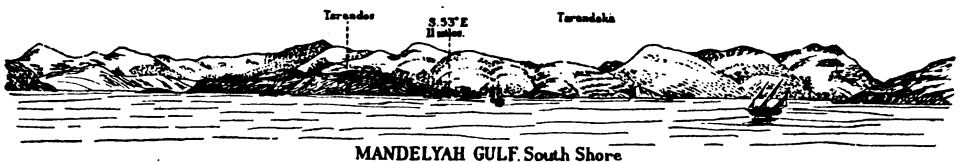


Chart No. 2,836a.

Chart, 1,465.
Var. 3° 45' W.

Guvergenik bay is $1\frac{1}{2}$ miles deep, with an average breadth of about half a mile, and having from 20 to 5 fathoms water. South-westward of the bay, are two little islets or rocks named **Karandakia** close to the coast, and the shore on the southern side of entrance is bordered by a narrow bank. On the south point called **Karahdereh**, are ruins, and at the head of the bay are others, with the village of **Kiuvergini**; this is the supposed ancient port of **Karyanda**. The bay is well sheltered, and fronted by **Tarandos** and **Tarandakia** islands.

Kavo Asar.—At $1\frac{1}{2}$ miles northward of **Tarandos** island, is **Kavo Asar**, the tip of a tongue of land projecting a mile north-westward, and off it, is **Red islet** or **Kargo nisi** about $1\frac{1}{2}$ cables in length; there are 10 fathoms water between the islet and the termination of the tongue, but on either side, the water is shoal, which narrows the passage, and it is only fit for small vessels. At $2\frac{3}{4}$ miles beyond **Red islet** is the entrance to **Bargylia** creek, and between, is a small islet and one or two shoal patches bordering the coast.

Plan on 1,889.
Lat. 37° 12' N.
Long. 27° 37' E.

Bargylia creek runs 7 cables in a south-easterly direction, and has from 9 to 3 fathoms water as far as a sandy spit, within which is a shallow lagoon with broken ground continuing one mile farther to the causeway of ancient **Bargylia**, when it turns and runs for a mile south-westward; the **River Aliki** discharges into the south-eastern part of this arm. On the site of **Bargylia** may be traced vestiges of ancient walls, remains of an aqueduct, theatre, temples, tombs, a fortress of the middle ages, and other ruins.

Chart, 1,546.

IASSUS BAY, at the eastern part of the gulf, extends nearly 5 miles north-eastward, with an average breadth of $2\frac{1}{2}$ miles; its shores are indented by several coves, and surrounded by hills which on the south are upwards of 1,000 feet high, and there are anchoring depths all over it.

At $1\frac{1}{2}$ miles north-eastward of **Bargylia** creek, is a little islet or rock surrounded by shoal ground, lying close to the south-western point of **Chulukioi** or **Kiulukioi** cove; on the north-eastern point of the cove, is the village of the same name, and thence, a road leads into the interior. Vessels anchor off the village.

Iassus.

Makronisi.



Sheiro bay.—On the north-western side of **Iassus** bay, a tongue of land projects three-quarters of a mile south-eastward, westward of which is the little bay of **Sheiro**, with from 7 to 3 fathoms water; a sunken rock lies a little within, on the eastern side of the entrance. **Makro nisi**, a narrow island, a mile in length, and parallel to the north-east side of the tongue of land, forms with it a narrow channel having from 7 to 11 fathoms water; farther in are two other islets, named **Chiro**

nisi and Aspro nisi, each with shoal water around it, the outer edge of which is steep-to. Elsewhere, all the upper part of Iassus bay has from 13 to 6 fathoms. Chart, 1,546.

Isene (ancient *Iassus*), about half a mile in length north and south, and formerly an island, but now united to the low shore, has on its western side the little port of Isene with from 3 to 4 fathoms over a space of 2 cables, and shoaler water within. The narrow entrance is 5 fathoms deep, between the remains of a mole on the west, and an old tower on the east. On the summit of Isene is a Venetian castle, and in the vicinity are the remains of a theatre, temple, aqueduct, and tombs, traces of the ancient walls, and other ruins. Plan on 1,878.

Between Isene and a projecting point on the east, is the bay of Isene about three-quarters of a mile deep, with a sandy shore at its head, bordered by shallow water, and in the outer part 5 to 6 fathoms deep, mud bottom; a stream runs into bay. To the eastward of Isene bay, is another bay named Kasalkioi with the village of the same name and a Custom-house. At about one mile to the southward of Kasalkioi, the shore is broken and bordered by shallow water which extends off nearly a quarter of a mile; the Sari Chai runs into the sea, and also feeds an extensive lagoon. Plan on 1,546.
Var. 3° 40' W.



Alaguni and Iassus Bays.

Alaguni bay.—To the north-westward of Isene bay, is Alaguni bay, $2\frac{1}{2}$ miles deep, with an irregular shore and shoal water extending from the salient points. Two shoal patches lie in the central part of the bay; one with 7 fathoms water on it, the other with 5 fathoms. The bay is formed by the termination of ridges on either side diverging from within; the ridge a mile from the north-western point is 904 feet high, and that about three-quarters of a mile within the south-eastern point, 643 feet high. Chart, 1,546.
Lat. 37° 15' N.
Long. 27° 30' E.

Kasikli bay, next north-westward of Alaguni, is 4 miles deep, and a mile wide at $1\frac{1}{4}$ miles distance from its head. Here, there is anchorage in 8 to 12 fathoms, mud bottom. The last mile of the bay runs in north, with a width of 2 to 3 cables, forming, two thirds of a mile from the head, a small sheltered anchorage in 6 fathoms; the head itself taking the shape of a little circular basin 3 to 9 feet deep, called Kasikli harbour, having a small islet in it.



Kasikli Bay, from Isabel Rock.

Mount Grius.—The bold elevated land on the north-western side of Kasikli bay, at a little more than one mile within, is 1,377 feet high; to the north-eastward, Mount Grius reaches 3,573 feet; beyond this again at from 10 to 15 miles from the head of the bays, the lofty range of the ancient Latmus is 1,500 feet above the level of the sea.

Chart, 1,546.

Kapota islet is about 4 cables in length, 184 feet high, and lies $2\frac{1}{10}$ miles W.S.W. from Cape Spratt the north-west entrance point of Kasikli bay. With the exception of a narrow bank at the northern end, the islet is clear of danger.

Kapota shoal, with 4 fathoms water over it, lies three-quarters of a mile E. $\frac{1}{2}$ S. from the centre of the islet, with a depth of 34 fathoms between.

Cape Nijekul on the eastern side of the entrance to Alaguni bay, S. 64° E., and well open of Cape Alanguli the western entrance point, leads southward of the shoal, and Kapota islet. The point, a mile northward of Kavo Grœas on the eastern side of the entrance to Basilicus bay, shut in with this cape, the latter bearing N. 14° W., will lead eastward of the shoal. To pass westward of the shoal, keep Kapota islet close aboard.

Chart, 1,546.
Lat. $37^{\circ} 19' N.$
Long. $27^{\circ} 26' E.$
Var. $3^{\circ} 45' W.$

Cape Spratt is the south-western termination of the bold elevated land rising over the western side of Kasikli bay, and from it a shoal extends off a distance of 2 cables. The shore from the cape thence round the eastern side of Basilicus bay, is irregular and bordered by shoal water.

Isabel rock with 3 feet water on it, and 7 and 8 fathoms around it, lies N.W. by W. $\frac{3}{4}$ W., distant $1\frac{1}{10}$ miles from Cape Spratt, and S.S.W., a little more than half a mile from Kavo Grœas.

Mount Salta bearing eastward of S.E. by E. $\frac{3}{4}$ E., and well open southward of Cape Spratt, will lead south of the rock; Xiphorima point, three-quarters of a mile eastward of the cape, keep well open E. $\frac{3}{4}$ S. will also clear the rock.

Ikikat rocks, extend over a space of one-third of a mile, with from one to 3 fathoms water on them, and from 5 to 12 fathoms round them; they are 8 cables westward of Kavo Grœas, with from 10 to 17 fathoms between them and the shore, and 20 fathoms outside them. At about three-quarters of a mile farther northward, and nearly the same distance from the shore, is another patch with $5\frac{1}{2}$ fathoms. The above dangers are on the eastern side of the fairway into Basilicus bay.

BASILICUS BAY.—The shore of Kyriaki point, the western entrance point of this bay, is irregular, being formed into several little points, and bordered by shoal ground which extends 4 cables eastward, with a large rock or islet on it, known as Kyriaki. Between this shore and that northward of Kavo Grœas on the east, the distance is nearly $2\frac{1}{2}$ miles; the bay then extends north-eastward about 5 miles to low land at its head. The shore all round the bay is bordered by rocks and shoal water, with shallow patches in the central part towards the head, where the bottom is generally uneven.

Panagia islet.—Basilicus bay is fronted by Panagia islet, about two-thirds of a mile southward of Kyriaki point, and $5\frac{1}{2}$ cables in length, surrounded by a bank with shallow rocky ground extending a quarter of a mile north-eastward.

Shoal.—At three-quarters of a mile beyond the rocky ground, and in the same direction, is a shoal 3 cables in extent with $2\frac{1}{2}$ fathoms water on it, and 5 fathoms on the bank between. Within the entrance, on the western side of Basilicus bay, is the bay of Kruvraike upwards of a mile deep, with from 6 to 9 fathoms water.

Lat. $37^{\circ} 23' N.$
Long. $27^{\circ} 28' E.$

Anchorage.—In the upper part of Basilicus bay, on the eastern shore, is the village of Akbuki, and off it is anchorage in 6 to 10 fathoms mud, south-westward of the shallow patches previously alluded to.

Directions.—A lane of deep water leads into the bay between Panagia islet and Kyriaki point, which may be used by small vessels. The summit of St. Apostola island, in line with the west side of Kapota islet, bearing S. 1° W., leads into Basilicus bay eastward of Panagia islet and between the dangers on either side; when well within the entrance, a vessel may anchor in Kruvraike bay, or steer along the eastern side for the anchorage off the village of Akbuki, avoiding the shore bank, and the shoals, in the northern part of the bay, for which the chart must be the guide.

Bank.—A large rocky bank, with 7 fathoms on it, lies south-westward of Panagia islet, with deeper water between. The outer part of the bank bears S.W. by W. $\frac{1}{2}$ W., and is distant $1\frac{1}{2}$ miles from the south extremity of Panagia islet.

Cape Monodendri (ancient *Posidium prom.*). — From the entrance of Basilicus bay to Cape Monodendri, the distance is about $7\frac{1}{2}$ miles; the irregular coast between forms Skrophes bay and a few little coves, and is bordered by shoal water, which 2 miles west of Skrophes bay, extends 6 cables from the shore.

The Posidium is a rocky bank, 3 cables in length north and south, with 3 fathoms least water on it; its southern end is 8 cables from the shore and bears S. by E. $\frac{1}{4}$ E., distant $1\frac{1}{2}$ miles from Cape Monodendri.

Approaching Cape Monodendri from the eastward, when near the Posidium shoal, Kyriaki point should be kept well open of Karako point on the western side of Skrophes bay, E. $\frac{1}{2}$ N. until Cape Monodendri bears N. by E., when this cape may be passed at a distance of 8 cables.

PHARMAKO.—This island (the ancient *Pharmakusa*) is 2 miles in length north and south, varies in breadth with bays on its eastern side, and its southern part is 300 feet high; the water all round it is deep except at one or two places close in to the shore, and there are some ancient ruins on it. It lies $5\frac{1}{2}$ miles south-westward of Cape Monodendri, with about 40 fathoms water midway between, over a nearly level bottom.

Kovelo bay (ancient *Panormus*) $3\frac{1}{2}$ miles northward of Cape Monodendri, is two-thirds of a mile deep, and open to the westward; on its southern side are two or three semicircular little coves, and a few years ago at the head of the bay, were some fragments of columns. A road leads from the bay to Ieronda, and the ruins of Didymi on a hill south-eastward, and thence to Skrophes bay. The shore from Cape Monodendri to Dinakli $6\frac{1}{2}$ miles northward, is irregular and bordered by a narrow bank with rocks; thence, the coast takes the form of an irregular, broken up, shallow bight to the mouth of Buyuk Mendere and Meander point, which bears N. $\frac{1}{2}$ W., distant 7 miles from Cape Monodendri.

GAIDARO (ancient *Hyetussa*) is an island of irregular shape, $4\frac{2}{5}$ miles in length east and west, and towards the western end, 720 feet high; the coastline is broken up into several bays or inlets. On the northern side of the island are four islets, and between Strongilo and Nero, the two central ones, is a large rock above water, from which a reef with less than 6 feet water on it extends westward half way to Strongilo; Nero islet 208 feet high, is $1\frac{1}{10}$ miles in length east and west, and its western end is united to Gaidaro by a reef.

Rock.—There is a rocky shoal with less than 6 feet water on it, lying nearly one-third of a mile east-north-eastward from Claro, the eastern islet, which being a salient point should be given a sufficient

Chart, 1,546.
Var. 3° 50' W

Chart, 1,574.
Lat. 37° 28' N.
Long. 26° 59' E.

Chart, 1,574.

berth to clear this shoal. At a short mile southward of Gaidaro and lying parallel to it, is the islet of Kunelli, narrow, but 6 cables in length, with from 35 to 45 fathoms water between it and Gaidaro.

The bays formed by the irregular coast of Gaidaro, are only convenient for small vessels in the inner corners, and with suitable winds. With the exception of the dangers named, the water round the island is deep at a short distance.

The passage between Gaidaro and the mainland, is deep and clear, and also between the island and Arki.

Chart, 1,546.

COAST.—**Meander point** is a low sandy projection, through which the Buyuk Mendere runs into the sea; on its southern side as before mentioned, the shore is broken and falls back to the north-eastward a considerable distance, leaving a large shallow opening which in part is used as a fishery. About 3 miles northward of the point, and $1\frac{1}{2}$ miles inland, is a hill 335 feet high, the ancient Lade island; the shore northward as far as the base of the elevated range of the Samsun dagh, a distance of 10 miles from the point, is low and broken, with lagoons open to the sea, used as fisheries, and swampy land within extending some distance into the interior. The coast is all along bordered by shoal water, and in places the depth of 5 fathoms is a mile from the low shore, although half a mile off Meander point itself there is 25 fathoms water.

Chart, 1,546.
Lat. $37^{\circ} 28' N.$
Long. $27^{\circ} 12' E.$
Var. $3^{\circ} 50' W.$

Buyuk Mendere or **Meddro Chai** (ancient *Meander*) after a long and tortuous course from the eastward between mountain barriers, passes the ruins of Miletus at about 5 miles from the coast, and running south-eastward, enters the sea at Meander point; the depth of water some distance within the mouth is 2 to 5 fathoms. The Palaio Mendere or Meddro (ancient *Gæsus*) joins the Meander from the north-north-east, a little below Miletus.

Caution.—The mouth of the Buyuk Mendere is said to have extended considerably to the southward since the date of the last survey; caution is therefore necessary when approaching the entrance.

Samsun dagh (ancient mount *Mykale*).—This elevated range of mountains extends east and west, upwards of 15 miles, and rises suddenly from the low swampy land on the south, to its lofty summits 3,459 feet to 4,130 feet above the sea, and falls again on the north, where its base forms the southern coast of the Gulf of Skala Nuova. Upon the rocky slopes towards the south-eastern termination of the mountain, are the ruins of Priene (now called Samsun), on a bold and precipitous rock; they consist of walls covering an extensive slope of the hill, out of which, as if built by art, spring perpendicularly the rocks on which the Acropolis was built. Priene is said to have been originally on the seashore. The elevated mass of the Samsun dagh terminates westward in Cape Kanapitza (ancient *Trogilium promontory*).

Chart, 1,530.

Cape Kanapitza.—At the termination of the low shore the coast (being the base of the Samsun dagh) turns suddenly westward for about 6 miles to Cape Kanapitza, when it trends northward to the strait of Samos. Close southward of Cape Kanapitza are three islets, each connected to the shore by shallow ground, two of which are enclosed in bays, and the third named Theopori forms the salient point of the coast, and is steep-to. (For Samos strait, see page 211.)

FURNI ISLANDS.—These islands (ancient *Korassiæ*) are of Chart, 1,537. a peculiar formation, and broken into the most fantastic shapes; the whole group consists of twelve islands and rocks, and all except Furni uninhabited. They have no good harbour, though there are many creeks where small vessels with local knowledge may lie. Furni, the largest island, occupies a space of $7\frac{1}{2}$ miles north and south, but is irregular and narrow, and rises at its northern end to a height of 1,591 feet. The only productions are a small quantity of corn, rabbits, some miserable pigs, and honey. The inhabitants are few, and collected in a small village, in a bay on the western side of the island, and near it are remains of ancient buildings.

The columns of the temple of Juno at Samos, were hewn from quarries on the south-western side of Furni island, where a few years ago, were to be seen parts of columns of the same dimensions and species of marble as those of that celebrated edifice.

LIGHT.—It is proposed to erect a lighthouse on Cape Malaki, the north extreme of Furni island. Chart, 1,537.
Var. 4° W.

Vagli cove, in the central part of the west coast of the main island, forms a secure anchorage for small vessels, but the water at the entrance is deep. Lat. $37^{\circ} 36' N.$
Long. $26^{\circ} 32' E.$

Marmoron bay.—The most secure anchorage, is in Marmoron bay (Marmarokopio) situated eastward of the southern point of Diapori island, where there is a mud bottom. The bay eastward of the northern part of Diaporo island, where the village is situated, is insecure, being open to northerly gales and the bottom rocky.

Agios Menas island.—On the eastern side of Furni, is the island of Agios Menas, about 2 miles in length north-east and south-west; in the little bay opposite its western end, there is temporary summer anchorage.

Themina, the western island is about 3 miles in length east and west, and 1,585 feet high; between it and Diapori island is a channel not quite half a cable wide, clear, and 10 fathoms deep, called Furni Boghaz, and in cases of necessity, with a fair wind or steam power, a vessel may pass through it. There is no passage between Diapori and Furni. The western extreme of Themina is separated from the coast of Nikaria by a passage $4\frac{1}{2}$ miles wide, which is clear and deep, and takes the name of the latter island.

Furni rock, said to have only 5 fathoms water on it, lies South, distant $1\frac{9}{10}$ miles from the south point of Makra nisi, the most southern islet of the group; to avoid this danger, keep within or without this distance, and as long as Furni Boghaz is open, a vessel is westward of the rock. (See page 332 and views on chart No. 1,537.) There are no other dangers by keeping a proper distance from the shore.

Furni pass.—The Furni islands are a dependency of Samos, and are separated from the south-western end of that island by a deep and clear channel $3\frac{1}{2}$ miles wide called Furni pass, but it has been observed that sailing-vessels making to the northward with contrary winds seldom pass through this channel, but prefer the strait of Samos.

Current.—The current always sets through between Samos and Furni to the northward, and causes a confused disagreeable sea.

For Samos island and coast to the northward, see page 214 *et ante*

PLACE.—SALONIKI. OBS. A LAT. 40° 39' N., LONG. 23° 7' E.

METEOROLOGICAL TABLE COMPILED FROM 5 TO 14 YEARS' OBSERVATIONS.

MONTH.	BAROMETER, reduced to 32° and Sea Level.			TEMPERATURE.			Relative Humidity.	RAIN.		WIND.										No. of Days Gale.	No. of Days Fog.	REMARKS.															
	Mean height.	Ex- treme Range.	Mean daily Range.	Mean.	Max.	Min.		Total Fall.	No. of Days.	Number of Days from																											
										N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm																			
																			Average Hourly Velocity.																		
5 years.																			14 years.																		
January	Ins. 30-13	1-46		65	17		% 77	Ins. 5	1-29	7	7	2	2	1	1	0	1	1	16																		
February	30-07	1-24		69	22		71	5	0-63	6	7	0	1	1	1	1	1	0	16																		
March	29-97	0-97		78	28		69	4	1-10	6	5	0	1	1	2	2	1	2	17																		
April	29-99	1-01		80	35		67	4	1-42	7	4	1	1	2	4	2	1	1	14																		
May	29-92	0-94		92	46		65	3	1-96	7	3	1	1	1	6	1	1	1	16																		
June	29-98	0-56		97	55		61	3	1-65	6	6	1	0	0	5	2	1	1	14																		
July	29-93	0-53		99	63		56	2	0-72	4	6	1	0	0	6	2	1	1	14																		
August	29-98	0-54		100	63		58	2	1-01	3	5	1	0	0	6	2	1	1	15																		
September	30-05	0-98		97	52		64	2	1-31	4	3	0	1	1	5	1	1	1	17																		
October	30-07	0-98		82	33		73	4	1-70	7	3	1	0	1	3	1	1	1	20																		
November	30-21	1-26		79	25		74	5	1-93	8	6	2	2	1	1	1	0	1	16																		
December	30-13	1-39		71	23		75	5	2-09	8	7	1	1	1	1	0	1	1	18																		
Means and Totals	30-04	1-46		62	17		68	4	16-81	73	62	11	10	10	41	15	11	12	193																		

* The maximum rainfall in 24 hours, 3-27 ins., occurred in November.

PLACE.—SMYRNA. OBS. Δ LAT. 38° 26' N., LONG. 27° 10' E.

METEOROLOGICAL TABLE COMPILED FROM 4 TO 24 YEARS' OBSERVATIONS.

MONTH.	BAROMETER, reduced to 32° and Sea Level.		TEMPERATURE.				Relative Humidity.		RAIN.		WIND.										No. of Days Gale.	No. of Days Fog.	REMARKS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	Mean Height.	Ex- treme Range.	Mean.		Max. Min.	Clouds Mean 0 to 10.	Total Fall.	No.* of Days.	Beaufort, Force.	Number of Days from																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			14 yrs.	15 yrs.						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	14 yrs.	11 yrs.	14 yrs.	15 yrs.	7 yrs.	24 yrs.	4 yrs.				4 yrs.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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* The maximum rainfall in 24 hours, 2-32 ins., was in December.

PLACE.—KHANIA, CRETE. OBS. Δ LAT. 35° 30' N., LONG. 24° 0' E.

METEOROLOGICAL TABLE COMPILED FROM 3 TO 10 YEARS' OBSERVATIONS.

MONTH.	BAROMETER, reduced to 32° and Sea Level.		TEMPERATURE.				RELATIVE HUMIDITY.		RAIN.		WIND.										No. of Days Gales.	No. of Days Fogs.	REMARKS.
	Mean Height.	Ex- treme Range.	Mean. Range.	Mean Daily Max. Min.	Mean Range.	Clouds, 0 to 10.	Relative Humidity.	Total Fall. Days.	No. of Days.	Number of Days from													
										Average Hourly Velocity.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.				
7 yrs.	7 yrs.	6 yrs.	6 yrs.	6 yrs.	6 yrs.	10 yrs.	7 yrs.	7 yrs.	7 yrs.	3 yrs.													
Ins.	Ins.	°	°	°	°	%	Ins.	Ins.	Ins.	1	8	3	2	4	3	3	1	2	2	5	6		
January -	30-11	52	13	59	46	76	7	4-13	13	2	6	4	3	3	1	2	2	5					
February -	30-07	51	13	58	45	75	7	3-04	11	2	5	3	4	3	2	4	1	7					
March -	30-03	56	16	64	48	72	5	1-77	7	1	3	5	3	2	2	5	4	5					
April -	29-05	59	16	67	51	70	5	0-79	4	2	2	5	2	2	1	10	3	4					
May -	29-05	67	18	76	58	67	4	0-39	2	2	3	4	2	2	1	6	4	6					
June -	29-09	75	19	83	64	61	2	0-24	1	3	4	2	1	2	1	4	7	7					
July -	29-00	79	17	86	69	58	1	0-00	0	2	4	3	1	3	1	7	5	5					
August -	29-04	78	17	86	69	57	1	0-08	1	4	4	3	1	3	1	5	2	7					
September -	30-03	74	17	83	66	62	3	0-31	2	2	4	3	1	3	1	5	2	7					
October -	30-07	68	16	77	61	67	4	0-95	6	2	4	3	1	2	3	3	1	12					
November -	30-11	61	14	69	55	74	6	6-73	11	2	4	5	2	3	2	3	1	8					
December -	30-07	56	14	63	49	76	7	5-63	14	1	6	4	2	3	3	4	1	7					
Means and Totals	30-02	65	16	73	57	63	4	24-96	72	24	53	44	24	32	21	56	32	79					

PLACE.—SYRA. OBS. Δ LAT. $37^{\circ} 26' N.$, LONG. $24^{\circ} 35' E.$

METEOROLOGICAL TABLE COMPILED FROM 4 TO 9 YEARS' OBSERVATIONS.

MONTH.	BAROMETER, reduced to 32° and Sea Level.		TEMPERATURE.			Relative Humidity		RAIN.*		WIND.										No. of Days Gales.	No. of Days Fog.	REMARKS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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January -	30-09	53	8	66	32	71	6	3-90	Ins.	5	10	6	1	1	2	4	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

* The maximum rainfall in 24 hours, 2-82 ins., occurred in November.

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"	-	-	-	Frodsham & Keen	-	-	-	31, South Castle Street.
"	-	-	-	John Bruce & Sons	-	-	-	25, South Castle Street.
"	-	-	-	Dobbie, McInnes, Ltd.	-	-	-	39, South Castle Street.
LONDON	-	-	-	E. Stanford	-	-	-	12-14, Long Acre, W.C.
"	-	-	-	Imray, Laurie, Norie, & Wilson	-	-	-	156, Minories, E.C.
"	-	-	-	H. Hughes & Son	-	-	-	59, Fenchurch Street, E.C.
"	-	-	-	Sifton, Praed, & Co., Ltd.	-	-	-	67, St. James' Street, S.W.
MARYPORT	-	-	-	Quintin Moore	-	-	-	Harbour House.
MIDDLESBROUGH	-	-	-	Mercantile Stores, Ltd.	-	-	-	Docks.
"	-	-	-	J. Durkin	-	-	-	Dock Street.
MILFORD HAVEN	-	-	-	W. H. Cowley	-	-	-	27, Hamilton Terrace.
NEWCASTLE-ON-TYNE	-	-	-	M. S. Dodds	-	-	-	61, Quayside.
"	-	-	-	S. A. Cail & Sons	-	-	-	29 & 31, Quayside.
NEWPORT, MON.	-	-	-	E. E. Williams	-	-	-	94, Dock Street.
NORTH SHIELDS	-	-	-	Jno. Lilley & Son, Ltd.	-	-	-	New Quay.
OBAN	-	-	-	Hugh Macdonald	-	-	-	"Times" Office, Esplanade.
PLYMOUTH	-	-	-	J. Blowey	-	-	-	23, Southside Street.
PORTSMOUTH	-	-	-	Gieve, Matthews, & Co.	-	-	-	70, Commercial Road.
QUEENSTOWN	-	-	-	T. Miller	-	-	-	1, Harbour Row.
SOUTH SHIELDS	-	-	-	T. L. Ainsley	-	-	-	Mill Dam.
SOUTHAMPTON	-	-	-	F. Smith & Son	-	-	-	23, Oxford Street.
"	-	-	-	Frank Moore, Ltd.	-	-	-	90, High Street.
SUNDERLAND	-	-	-	J. J. Wilson & Son	-	-	-	18 & 19, Hudson Road.
"	-	-	-	T. Reed & Co.	-	-	-	184, High Street, West.
WEST HARTLEPOOL	-	-	-	A. Willings & Co.	-	-	-	73, Church Street.

SUB-AGENTS. (*Abroad.*)

ADELAIDE (S.A.)	-	- A. E. Sawtell	-	-	- Divett Street, Port Adelaide.
AMSTERDAM	-	- L. J. Harri	-	-	- Prins Hendrikkade, No. 90.
ATHENS	-	- Eleftheroudakis & Barth	-	-	- Place de la Constitution.
BOMBAY	-	- Lawrence & Mayo	-	-	- Esplanade.
BRISBANE (QUEENSLAND)	-	- Watson, Ferguson, & Co.	-	-	- Queen Street.
BUENOS AIRES	-	- Artur Reyes Lazo	-	-	- Corrientes 435, Escritorio 3.
CALCUTTA	-	- Jas. Murray & Co.	-	-	- Government Place.
CAPE TOWN	-	- W. Mercer & Co.	-	-	- 9, Loop Street.
"	-	- Bach & Hickson	-	-	- 23, Dock Road.
COLOMBO	-	- C. Mathew & Co.	-	-	- Shipping Agents.
GIBRALTAR	-	- James Molinary	-	-	- Shipchandler, &c.
HAGUE, THE	-	- Van Cleef Brothers	-	-	- Libraries.
HAVRE	-	- L. Croix	-	-	- 15, Rue de Paris.
HOBART (TASMANIA)	-	- Walch & Sons	-	-	- Merchants.
HONG KONG	-	- G. Falconer & Co.	-	-	- Queen's Road, Central.
LISBON	-	- J. Garraio & Co.	-	-	- Caes do Sodre, 84 1°D.
LOURENCO MARQUES	-	- A. W. Bayly & Co.	-	-	- Booksellers, &c.
MALTA	-	- Collector of Customs	-	-	- Custom House.
MARSEILLE	-	- I. Bianchetti	-	-	- 2, Rue de la Republique.
MELBOURNE	-	- J. Donne & Son	-	-	- 300, Post Office Place.
MONTREAL	-	- Harrison & Co.	-	-	- 53, Metcalfe Street.
NEW YORK	-	- John Bliss & Co.	-	-	- 128, Front Street.
NEWCASTLE (N.S.W.)	-	- W. H. Sproull & Co.	-	-	- 99, Hunter Street.
PARIS	-	- Augustin Challamel	-	-	- 17, Rue Jacob.
PEIRÆUS	-	- H. C. Decavalla	-	-	- Shipchandler.
PORT NATAL	-	- Lewis J. Wilson	-	-	- The Point.
PORT SAID	-	- C. J. Vella & Co.	-	-	- Shipping Agents.
PRINCE RUPERT (B.C.)	-	- McRae Bros., Ltd.	-	-	- P.O. Drawer, 1536.
QUEBEC	-	- T. J. Moore & Co.	-	-	- 118 & 120, Mountain Hill.
RANGOON	-	- Lawrence & Mayo	-	-	- 8, Phayre Street.
RIO DE JANEIRO	-	- D. Norris	-	-	- 28, Rua da Assembleia.
SAINT JOHN'S (NEW- FOUNDLAND).	-	- Ayre & Son	-	-	- 231, Water Street.
SEATTLE (WASH.)	-	- Max Kuner Co.	-	-	- 94, Columbia Street.
SHANGHAI	-	- Walter Dunn	-	-	- 133, Szechuen Road.
"	-	- Hirsbrunner & Co.	-	-	- 1, Nankin Road.
SINGAPORE	-	- Hon. Sec. and Treasurer	-	-	- Sailors' Home.
SYDNEY (N.S.W.)	-	- Turner & Henderson	-	-	- 16 & 18, Hunter Street.
TOKYO (JAPAN)	-	- Takata & Co.	-	-	- Merchants.
TORONTO (CANADA)	-	- Charles Potter	-	-	- 85, Yonge Street.
VALPARAISO	-	- Holbrook & Tyrer	-	-	- 153, Calle Blanco.
VANCOUVER CITY (B.C.)	-	- Thomson Stationery Co., Ltd.	-	-	- 325, Hastings Street.
VICTORIA (B.C.)	-	- Hibben & Co.	-	-	- 66, Government Street.

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